

Bronze Age Landscape and Society in Southern Epirus, Greece

Thomas F. Tartaron

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Table of Contents

List of Figures	ii
List of Tables	iv
Main Abbreviations	iv
Acknowledgments	v
Preface	vi
Chapter 1 The Archaeological Problem	1
Chapter 2 Theoretical Perspectives and Methodological Approaches	10
Chapter 3 Previous Research on the Bronze Age of Epirus: A Brief Summary	18
Chapter 4 Bronze Age Sites and Other Findspots: Catalogue and Commentary	33
Chapter 5 Artifact Analysis: Ceramics	71
Chapter 6 Artifact Analysis: Lithics and Other Classes of Material Culture	118
Chapter 7 The Lower Acheron Drainage: Toward a Bronze Age Landscape	129
Chapter 8 A Medium-Term Conjuncture: Mycenaean Presence in Southwestern Epirus	145
Chapter 9 The Survey Data in Context: The Lower Acheron Valley in the Bronze Age	178
Appendix	213
Bibliography	217
Index	235

List of Figures

Figure 1.1	Mediterranean area showing the province of Epirus	1
Figure 1.2	Map of Epirus showing Nikopolis Project survey area	3
Figure 1.3	Map of modern lower Acheron valley	4
Figure 1.4	Satellite image of Epirus and neighboring lands	6
Figure 1.5	Grid plan of lower Acheron region, classified by topographic type	7
Figure 2.1	Nikopolis Project survey tract form	15
Figure 3.1	Plans and sections of prehistoric features, Dodona	22
Figure 3.2	Plan of the Nekyomanteion	22
Figure 3.3	Map showing locations of Bronze Age sites known in the early 1990s	25
Figure 4.1	Map of sites in Nikopolis Project survey area and zones for catalogue of sites	34
Figure 4.2	Map of the lower Acheron region showing locations of Bronze Age sites	38
Figure 4.3	Cyclopean wall, Ayia Eleni	39
Figure 4.4	View of Xylokastro hill (Ephyra), showing cyclopean walls	41
Figure 4.5	Detail view of south gate, Ephyra	41
Figure 4.6	Plan of Ephyra-Nekyomanteion ridge, showing survey units and zones of analysis	42
Figure 4.7	Topographic map of Kastriza and environs	45
Figure 4.8	View of Kastriza hill and its setting	45
Figure 4.9	View of exterior face of cyclopean wall, Kastriza	47
Figure 4.10	View of exposed top of cyclopean wall, Kastriza	47
Figure 4.11	View of gate in cyclopean wall, Kastriza	48
Figure 4.12	View of Acheron plain from Bronze Age site at Vouvopotamos	55
Figure 4.13	Simplified soil profile, Vouvopotamos	55
Figure 4.14	Map of Ayios Thomas peninsula, showing locations of Bronze Age sites	58
Figure 4.15	View of stratified profile, Skaphidaki	60
Figure 4.16	Simplified profile drawing, Skaphidaki	60
Figure 4.17	View of drained polje at Cheimadio	65
Figure 4.18	Plan of stone foundations of putative Bronze Age huts, Thesprotiko	66
Figure 4.19	View of Mycenaean tholos tomb, Kiperi	68
Figure 4.20	View to Acheron mouth from Kiperi tholos tomb	68
Figure 5.1	Examples of plastic decoration on K II pottery	72
Figure 5.2	Examples of K III vessel forms	78
Figure 5.3	K III vessels with shapes similar to Minyan forms, Dodona	79
Figure 5.4	K III vessels with shapes similar to Minyan forms, Dodona, Elaphotopos, Mazaraki	80
Figure 5.5	“Pseudo-Minyan” pottery from Albania	81
Figure 5.6	K IV pottery shapes and profiles from Vitsa	85
Figure 5.7	K IV vessels and sherds from Dodona and western Macedonia	86
Figure 5.8	Topographic map showing routes connecting Epirus, Albania, and Macedonia	87
Figure 5.9	Handmade kylix of local manufacture, Dodona	90
Figure 5.10	Fragments of squat alabastra from Kiperi tholos tomb	91
Figure 5.11	“Skyphos-type krateriskos,” Ephyra	91
Figure 5.12	K II/III rims from small tableware	96
Figure 5.13	K II/III sherd profiles	100
Figure 5.14	K II/III sherd profiles	101
Figure 5.15	K II/III sherd profiles	102
Figure 5.16	Orange-red sherd profiles	103
Figure 5.17	K II/III bowl rims	104
Figure 5.18	K II/III bowl and cup sherds	104
Figure 5.19	K II/III rim from necked jar	104
Figure 5.20	K II/III rims from necked jars	104
Figure 5.21	K II/III rim from wide-mouthed jar	105
Figure 5.22	K II/III handles	105
Figure 5.23	K II/III sherd preserving parts of rim, handle, and body	105
Figure 5.24	K II/III sherd preserving parts of rim, handle, and body, profile view	105
Figure 5.25	Handles from small K II/III vessels	106
Figure 5.26	Horizontal handle from K II/III vessel, top view	107
Figure 5.27	Horizontal handle from K II/III vessel, side view	107
Figure 5.28	K II/III trianguloid handle	107

Figure 5.29	K II/III trianguloid handles	107
Figure 5.30	K II/III plastic decoration	108
Figure 5.31	K II/III plastic decoration	108
Figure 5.32	K II/III plastic decoration	108
Figure 5.33	K II/III incised decoration	108
Figure 5.34	K II/III sherd with deep, gouge-like impressions	108
Figure 5.35	Top of K II/III rim with impressions	108
Figure 5.36	K II/III fragments with plastic decoration	108
Figure 5.37	Orange-red Group 1 rim of pithoid vessel (?)	111
Figure 5.38	Orange-red Group 1 rim and handle from deep conical bowl	111
Figure 5.39	Orange-red Group 1 horizontal handle	111
Figure 5.40	Orange-red Group 2 rim from small cup or amphoriskos	111
Figure 5.41	Orange-red Group 2 rim from deep cup or bowl	111
Figure 5.42	Orange-red Group 2 body sherd with ovoid impressions	111
Figure 5.43	Mycenaean sherds from the Nikopolis Project survey	114
Figure 5.44	Detail of Mycenaean sherd	114
Figure 5.45	Detail of Mycenaean sherd	114
Figure 5.46	Sherds from Mycenaean kylikes, Nikopolis Project survey	115
Figure 5.47	Krater (?) base of Mycenaean type	115
Figure 6.1	Examples of locally available flint nodules	119
Figure 6.2	Obsidian blade fragment	119
Figure 6.3a	Sickle element on a flint flake with silica gloss	121
Figure 6.3b	Sickle element on a flint flake with silica gloss	121
Figure 6.3c	Sickle element on a blade with silica gloss	121
Figure 6.3d	Sickle element of MBA–LBA type	121
Figure 6.3e	Sickle element on a double endscraper	121
Figure 6.3f	Sickle element on a flint flake	121
Figure 6.3g	Sickle element on a flint flake with traces of silica gloss	121
Figure 6.4a	Hollow-based projectile point of MBA–LBA type	122
Figure 6.4b	Fragment of projectile point of LN–BA type	122
Figure 6.4c	Fragment of projectile point of LN–BA type	122
Figure 6.4d	Fragment of projectile point of LN–BA type	122
Figure 6.4e	Fragment of projectile point of LN–BA type	122
Figure 6.4f	Fragment of projectile point of LN–BA type	122
Figure 6.4g	Fragment of projectile point of LN–BA type	122
Figure 6.5	Notched flake, flint	125
Figure 6.6	Retouched pressure blade, flint	125
Figure 6.7a	Perçoir on a denticulated flake	126
Figure 6.7b	Perçoir on a flake	126
Figure 6.7c	Notched cortical flake	126
Figure 6.7d	Scraper on a pebble core	126
Figure 6.7e	Retouched cortical flake	126
Figure 7.1	Simplified geology of the lower Acheron valley	130
Figure 7.2	View of Kalodiki polje	132
Figure 7.3	Glacio-hydro-isostatically corrected relative sea level curve for Epirote coast	133
Figure 7.4	Hypothetical deglaciation shoreline map for southern Epirus	133
Figure 7.5	Locations of geological cores taken in the lower Acheron valley	134
Figure 7.6	Reconstruction of Glykys Limin Bay in the Bronze Age	135
Figure 7.7	Panoramic view of concentric fossil beaches at mouth of Acheron River	136
Figure 8.1	Map of Epirus showing sites with material of Mycenaean type	146
Figure 8.2	Swords of Aegean type from Mesogephyra and Dodona	149
Figure 8.3	Daggers of Aegean type from Dodona and Kalpaki	150
Figure 8.4	Daggers of Aegean type from Kalpaki, Mesopotamos, and Kastritsa	151
Figure 8.5	Swords of Aegean type from Epirus and Albania	152
Figure 8.6	Bronze artifacts of “northern” type from Epirus	155
Figure 9.1	Diachronic site map for lower Acheron valley, LN–FN	194
Figure 9.2	Diachronic site map for lower Acheron valley, general Bronze Age	194
Figure 9.3	Diachronic site map for lower Acheron valley, MBA	195
Figure 9.4	Diachronic site map for lower Acheron valley, LBA	195

Figure 9.5	Diachronic site map for lower Acheron valley, LH III	196
Figure 9.6	Diachronic site map for lower Acheron valley, EIA	196
Figure 9.7	Proposed LH III site hierarchy, lower Acheron valley	201
Figure 9.8	Proposed intraregional activity zones, lower Acheron valley	202
Figure 9.9	Hypothetical inland route between Ephyra and Kiperi	210

List of Tables

Table 1.1	Chronological table of the Greek Bronze Age	2
Table 1.2	Survey area by topographic type, lower Acheron valley	7
Table 3.1	Elements of material culture at Epirote Bronze Age sites	27–28
Table 4.1	Summary of Bronze Age findspots, Preveza nomos	35
Table 4.2	Percentage abundance by artifact type, Ephyra-Nekyomanteion ridge	42
Table 5.1	Hypothetical chronological framework for prehistoric pottery, Epirus	93
Table 5.2	Summary of Bronze Age sherds from Nikopolis Project findspots	95
Table 5.3	Sherd thickness data, Nikopolis Project surface survey	99
Table 6.1	Association of Bronze Age pottery and lithic assemblages	119
Table 6.2	Material evidence other than ceramics and lithics, Nikopolis Project	127
Table 7.1	Main geological formations of the lower Acheron valley	131
Table 7.2	Mean monthly rainfall at locations in Epirus and Messenia	140
Table 7.3	Mean monthly temperature at selected locations in Epirus	140
Table 8.1	Epirote sites with elements of Mycenaean type or inspiration	147
Table 8.2	Shapes and find contexts of Mycenaean-style pottery in Epirus	161
Table 8.3	Archaeological correlates of tribes and chiefdoms	163
Table 8.4	Organizational patterns in the lower Acheron valley before LH III	175
Table 8.5	Organizational patterns in the lower Acheron valley during LH III	175
Table 9.1	Hypothetical seasonal resource acquisition schedule, lower Acheron valley	180
Table 9.2	Surface area available for study by topographic class, lower Acheron valley	191
Table 9.3	Summary of coverage by survey intensity	191
Table 9.4	Summary of systematic coverage by topographic class	191
Table 9.5	Density of activity loci by topographic class	191
Table 9.6	Provisional chronology for late prehistoric loci, lower Acheron valley	193
Table 9.7	Artifact density data, lower Acheron valley	197
Table 9.8	Interpretive data for findspots in the lower Acheron valley by topographic class	198
Table 9.9	Comparison of population responses to economic stimuli in LH III	199
Table 9.10	Hypothetical hierarchy of settlements in LH III, lower Acheron valley	200
Table 9.11	Diachronic pattern of late prehistoric settlement in the lower Acheron valley	208

Main Abbreviations

BA	Bronze Age
EBA	Early Bronze Age
EH	Early Helladic
EIA	Early Iron Age
FN	Final Neolithic
K I	Category I pottery
K II	Category II pottery
K III	Category III pottery
K II/III	Category II/III pottery
K IV	Category IV pottery
LAV	Lower Acheron Valley
LBA	Late Bronze Age
LH	Late Helladic
LN	Late Neolithic
MBA	Middle Bronze Age
MH	Middle Helladic

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This work is dedicated, with much love, to Juliana, Pooh, and Snoopy too!

Preface

In this monograph I have updated, revised, and rethought my 1996 doctoral dissertation *Bronze Age Settlement and Subsistence in Southwestern Epirus, Greece* (Boston University). The new title places less emphasis on traditional concerns of processual archaeology, though these are by no means ignored, and more on the social and other non-material dimensions of life that are increasingly integral to landscape archaeology. Although the geographical focus of my study is southern Epirus, and in particular the lower valley of the Acheron River, I also attempt a general, though not exhaustive, synthesis of the Bronze Age evidence from all of Greek Epirus. I can offer some justification for the additional effort. The Epirote Bronze Age remains poorly known, even among Aegean and European prehistorians, and there has been no new synthesis for some time. Until recently, most of the scholarly work has been in Greek, much of it rather inaccessible, and this may have discouraged the wide dissemination of information. More importantly for the present case, however, a fresh assessment of evidence from the whole of Epirus (and to a lesser extent, surrounding regions) was essential to place events and longer-term processes in the lower Acheron valley in proper context. The landscapes of Epirus are highly diverse, and the lower Acheron valley, as lowland, coastal, and Mediterranean in climate, presented a singular, and in my view extraordinary, set of circumstances to Bronze Age inhabitants. The important contrasts that one detects across Epirus throw into relief the divergent trajectory of the lower Acheron valley, and suggest certain explanations for it.

I have no illusions about the shelf life of my synthesis, however. There has been a surge of interest and archaeological investigation in Epirus, and many of my observations, and certainly all my catalogues, maps, and tables, will be in need of revision even as the monograph appears. But such is the healthy process of archaeological investigation. A more realistic hope for this work is that it will give the reader a sense of the Bronze Age landscapes of lowland southern Epirus, and a feeling for what it might have been like to inhabit them. In a restricted coastal zone, timeless and stable rhythms of life were interrupted rather dramatically for a century or two by the presence of Mycenaean Greeks. I hope that my depictions and interpretations of that interlude will make a contribution to the study of Mycenaean interaction with peripheral lands and peoples. But in a broader sense, I would be gratified if this study stimulated interest among young archaeologists in resolving some of the difficult issues of stratigraphy, typology, chronology, etc., that hinder further progress. A recurring theme of this study is how little secure knowledge we have, and I anticipate that future work will greatly revise the conclusions reached here. I look forward to those results and new interpretations.

New Haven, Connecticut
May, 2004

Chapter 1: The Archaeological Problem

Introduction

Between 1991 and 1995, a program of archaeological research, known as the Nikopolis Project, was implemented in southwestern Epirus, Greece (Wiseman and Zachos 2003).¹ The expressed aim of the collaborative effort was “...the explanation of the changing relationships, from prehistoric through mediaeval times, between humans and the land and resources they exploited...” (Wiseman 1991: 1). The Nikopolis Project was the first systematic exploration of the Epirote countryside, and the first to employ the methodological tools that have come to be associated with landscape archaeology; in particular, the use of systematic surface survey and paleoenvironmental reconstruction to arrive at explanations for changing patterns of human activity across the landscape over time.

This monograph represents an updating and substantial revision of my doctoral dissertation, *Bronze Age Settlement and Subsistence in Southwestern Epirus, Greece* (Boston University, 1996), taking advantage of information published since that time, and offering new interpretations. The essential aim remains the same: to reveal and explain patterns of human settlement and subsistence on the Bronze Age landscape corresponding to the modern *nomos* (canton) of Preveza in southwestern Epirus (Figures 1.1, 1.2; Table 1.1), with a special analytical emphasis on the valley of the lower Acheron River (Figure 1.3). The study employs original data acquired in three field seasons of archaeological survey and geomorphological study to reconstruct the general features of the landscape and to explain the evidence for human activity upon it. These data begin to fill vast lacunae in our knowledge of the region and time period in question, for apart from a lack of systematic reconnaissance, the handful of Bronze Age sites that have been excavated remain largely unpublished.

With the benefit of archaeological and paleoenvironmental information, I offer models of human exploitation of the environment for settlement and subsistence, and identify sources of stability and change in these systems. Interaction with exogenous sources of goods and information is found to be a fundamental agent of change, and therefore the impact on southwestern Epirus of contact with Mycenaean Greece, as well as with other surrounding regions, forms a recurring theme of the study. Simultaneously, I use the enhanced database to evaluate, and in some cases challenge, previous models that were founded on insufficient data or on faulty analogy with modern populations and environmental conditions.

In addition to a lack of information regarding sites and their contexts, there is little chronological definition within the Bronze Age, until the appearance of Mycenaean objects in graves and certain settlement deposits provides firmer footing (see Chapter 3). The native pottery industry

exhibits little apparent change in the course of the Bronze Age, with the result that local pottery cannot be closely dated in the absence of recognizable imports. Nothing was known about local lithic industries of the Bronze Age, which have never been explicitly studied (but see Tartaron, Runnels, and Karimali 1999). Together, local pottery and lithics make up virtually the entire assemblage of most excavated sites and surface scatters. Furthermore, there exists at present no site in Epirus with well-stratified deposits spanning the Bronze Age. On the basis of my analyses of the artifacts from the surface survey, as well as from several excavated assemblages in museums in and around Epirus, I introduce potential refinements to issues of function and chronology. I do not pretend to have solved all or even many of the chronological quandaries that beset the Epirote Bronze Age, but the refinements I propose allow, for the first time, a reasonable chronological framework for Epirote surface sites. A robust Bronze Age chronology will be the fruit of long and careful work in the future, which will depend on the identification of undisturbed stratigraphic sequences and close study of stratified artifacts.

In the final analysis and synthesis of the available data, I seek to demonstrate that the coastal plain of the lower Acheron drainage presented a fertile environment for year-round occupation by communities of moderate size, which employed a diversified strategy of resource procurement (e.g., herding, agriculture, hunting, gathering) involving the exploitation of numerous ecological niches, all accessible close at hand, on a seasonal basis.

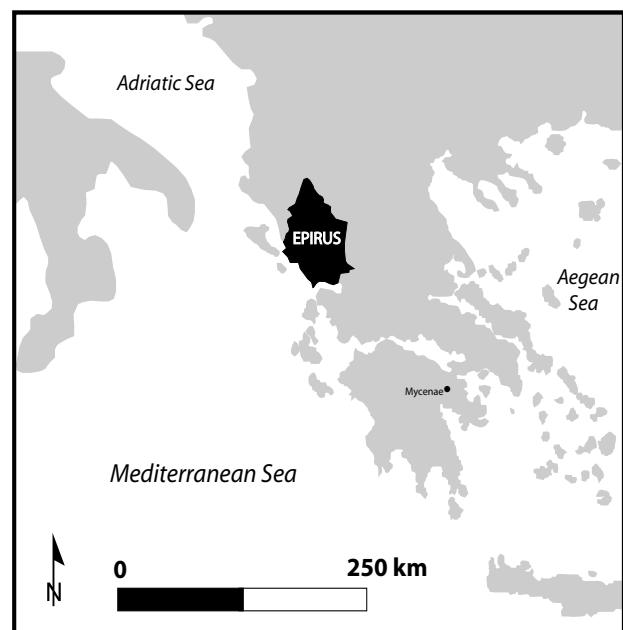


Figure 1.1 The Mediterranean area showing the province of Epirus.

Table 1.1 Chronological table of the Greek Bronze Age*

<i>Period and Phase</i>	<i>Suggested Calendar Years B.C.</i>
Early Helladic I	3100/3000–2650
Early Helladic II Early (Lerna IIIA–B, Thebes group A)	2650–2450/2350
Early Helladic II Late (Lerna IIIC–D, Lefkandi I, Thebes group B)	2450/2350–2200/2150
Early Helladic III	2200/2150–2050/2000
Middle Helladic I	2050/2000–1950/1900
Middle Helladic II	1950/1900–1750/1720
Middle Helladic III	1750/1720–1680
Late Helladic I	1680–1600/1580
Late Helladic IIA	1600/1580–1520/1480
Late Helladic IIB	1520/1480–1445/1415
Late Helladic IIIA1	1445/1415–1375
Late Helladic IIIA2	1375–1300
Late Helladic IIIB1	1300–1225
Late Helladic IIIB2	1225–1190
Late Helladic IIIC Early	1190–1130
Late Helladic IIIC Middle	1130–1070
Late Helladic IIIC Late	1070–1050/1030
Submycenaean	1050/1030–950

* After Rutter 1993: tab. 2 (dates to LH IIB), and Mountjoy 1993 (dates after LH IIB).

Sources of Information

The primary data set is formed by the environmental and artifactual data collected as part of the Nikopolis Project's diachronic archaeological surface survey in three field seasons from 1992 to 1994 (Wiseman 1991, 1992a, 1992b, 1993a, 1993b, 1994, 1998). Over that period, more than 500 survey units were walked in the Nikopolis Project study area, and thousands of fragments of pottery, flaked stone, metal, glass, and other material were retained as part of surface artifact collections. Thirty-nine new loci of Bronze Age activity are reported herein, approximately twice the number known in the nomos previously (see Chapter 4). Nearly 2,500 potsherds of Bronze Age type were observed in the field; more than 2,000 of these were collected. No accurate estimate of the size of the Bronze Age lithic assemblage yet exists because the attributes of the industry are not yet well defined, and therefore chronology cannot normally be assigned independently on the basis of flaked stone alone. There is little doubt, nonetheless, that Bronze Age flakes littering the surface of southwestern Epirus far outnumber the potsherds of similar date.

The surface ceramic assemblage was analyzed in 1994 and 1995; its essential features and many examples are illustrated in Chapter 5. For comparative material, I inspected several collections in the Archaeological Museum in Ioannina, including portions of the late prehistoric assemblages from Ephyra, Dodona, Vitsa, Krya, Doliana, and the Kiperi tholos tomb.² Farther afield, I was able to inspect pottery from the ongoing excavations of Megaron B at Thermon in Aitolia, and that excavated over several seasons at the Konispol Cave in southwestern Albania.³

The results obtained from the comparative study of the ceramic material allow me to postulate certain developments in the local ceramic industry in Epirus, with potentially significant consequences for interregional interaction in the Bronze Age. The information that could be extracted from the flaked stone was much more limited. A small number of tools with clear affinities to known Bronze Age types are identified; these exemplars, along with an analysis of the lithics found in close association with Bronze Age pottery, suggest the outlines of a Bronze Age flaked-stone industry (Chapter 6). Other classes of material, including architecture, bone, and shell, are also discussed in Chapter 6.

Surface survey results from the entire Nikopolis Project study area informed my research in the lower Acheron valley. Bronze Age material found in a variety of locations and environmental zones throughout the nomos is used as comparative data, and to evaluate inferences made from the Acheron findings. The Palaeolithic survey, a separate component of the Nikopolis Project employing extensive sampling techniques to prospect for Palaeolithic activity (Runnels and van Andel 2003), located several sites of the Bronze Age and other periods.

The geomorphological component furnished data crucial to my understanding of the Bronze Age natural environment of the lower Acheron drainage. The main operations were geomorphological observation of site contexts and geological deposits, and a program of geological coring in locations of special interest, including the vicinity of the mouth of the Acheron River.⁴ Analysis of the cores revealed the general outlines of changes in the shoreline and the extent of a broad bay (ancient Glykys Limin) over time, and

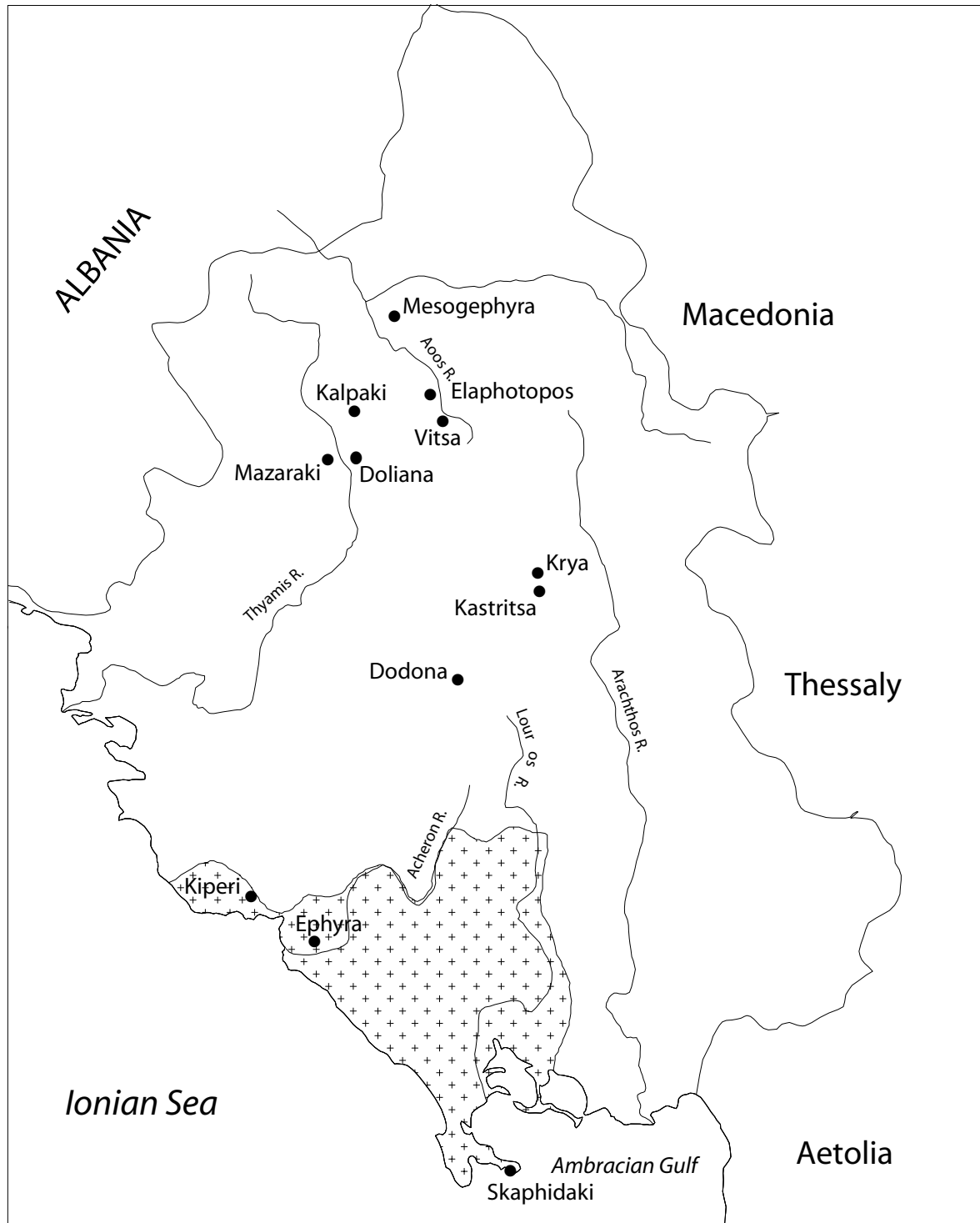


Figure 1.2 Map of Epirus with the Nikopolis Project survey area highlighted. The locations of important later prehistoric sites are identified.

provided clues to the paleobotanical history of the plain (Chapter 7). Information about the natural vegetation of the coastal zone of southwestern Epirus was inferred in part from published pollen cores taken in central and northern Epirus (Bottema 1974; Willis 1992a, 1992b, 1992c, 1997).

Documentary evidence in the form of ancient testimonia and the descriptions of travelers was found to be enlightening on a wide spectrum of issues, ranging from

the natural setting of the lower Acheron region to mythological traditions involving Epirus (see especially Chapter 3). Often imparted in short passages or references, this class of information is nonetheless relevant to several aspects of the discussion, and thus appears frequently. A final source of documentation resides in the accumulated (chiefly archaeological) research on the Bronze Age of Epirus and surrounding regions, which was incorporated at every stage of the study.

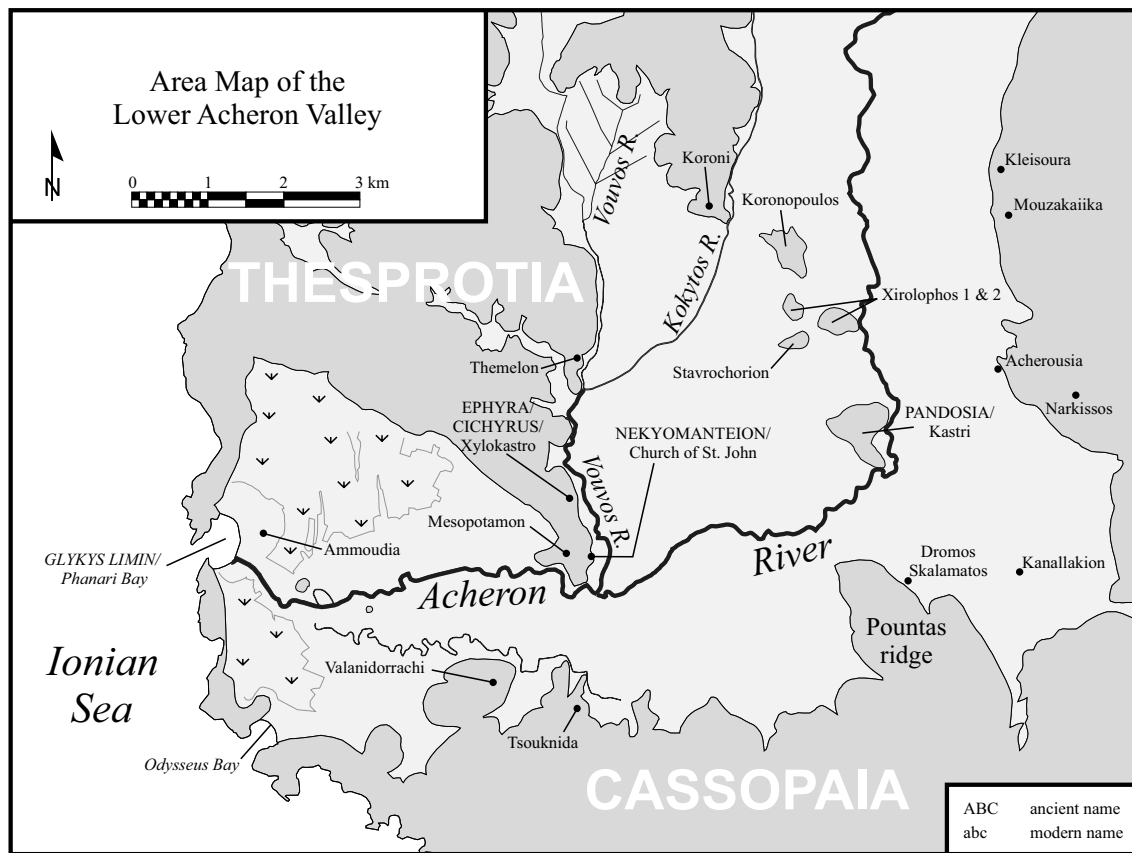


Figure 1.3 Map of the modern lower Acheron valley. Courtesy Mark R. Besonen.

Geographical Setting

Three distinct but nested study zones must be distinguished at the outset. The first is the whole of Epirus (Figure 1.1). A basic synthesis of the data on Bronze Age Epirus is attempted, particularly in Chapters 3, 7, and 8, and elsewhere this information forms a background to inferences concerning the two smaller zones. The second is the study area of the Nikopolis Project, which conforms rather closely to the limits of the nomos of Preveza (Figure 1.2), a region of more than 1,200 sq km. Information on Bronze Age activity throughout the nomos is presented in this monograph. A particular analytical focus, however, is placed upon a third zone: the lower floodplain of the Acheron River, its tributary valleys, the coast of the Ionian Sea at the Acheron River mouth, and the hills that rise above the plain, notably to the east and south (Figure 1.3, Chapters 7–9). The total area of the lower Acheron drainage, as defined in the present research, is approximately 109 sq km. In referring to the lower Acheron, the terms “drainage” and “valley” are used interchangeably to include all of the topographic features in and surrounding the plains of the Acheron and its tributaries. “Plain” or “floodplain,” however, refers only to the level plain formed by the alluvium of the Acheron and its tributaries, and by longshore deposition along the coast.

The Acheron River enters its lower drainage by tumbling from deeply dissected gorges near the village of Glyki,

and subsequently flows southward, cutting a meandering path through its floodplain. Round the prominent hill of Kastri, the river takes a turn to the west and flows in that direction to its mouth on the Ionian Sea. Two other rivers, the Kokytos and the Vouvos, flow into the plain as well, the former rising near Paramythia and flowing roughly south, and the latter originating near Margariti and flowing southeast toward the Acheron. The Vouvos empties into the Kokytos near the village of Themelo, and the united river then joins the Acheron east of the ridge upon which the village of Mesopotamos stands. The floodplains of these three rivers persisted as wetlands until the 20th century, when they were drained, each in turn, to free the fertile soil for agricultural use. Several small limestone ridges rise in the Acheron floodplain, and relatively steep limestone slopes hem in the plain on the east and south. To the west, the Ionian seacoast is mostly steep and rocky in this area, with few anchorages suitable for safe landfall. A small remnant of the once-wide embayment persists to the north of the present mouth of the Acheron River, in front of the village of Ammoudia. This inexorably shrinking bay has appeared in recent centuries on maps and in colloquial references as Phanari Bay, and by extension, the Acheron plain as far north as the village of Glyki is known as the Phanari plain.

A detailed analysis of the Bronze Age environmental context of the lower Acheron valley is contained in Chapter 7.

Justification for Studying the Lower Acheron Drainage

In view of the paucity of information on the settlement of Epirus in the Bronze Age, one could justify the selection of almost any location for systematic exploration on the grounds that important new data would be secured. Yet there were several particularly compelling reasons to choose the lower Acheron region, and to suppose that significant results would be obtained.

Demonstrated importance of the region in the Late Bronze Age

Whereas the early phases of the Bronze Age in Epirus are virtually undefined, contacts with the wider world are apparent in the lower Acheron region in the Late Bronze Age. Many observers accept that the description of the realm of Hades and Persephone in the *Odyssey* (10.508–516) corresponds closely to the topography of the lower Acheron plain beside the Ionian Sea. Pausanias (1.17.5) was certainly convinced: “Near Kichyros [Ephyra?] lie an Acherousian lake and a river Acheron, and the detestable stream Kokytos. I think Homer must have seen this region and in his very daring poetry about Hades taken the names of rivers from the rivers in Thesprotia” (transl. P. Levi). There is less agreement that the Homeric works describe places and events in the Mycenaean world, although rare survivals from Late Bronze Age times seem undeniable (see Chapter 3). In any case, the landscape of Epirus figures in the earliest mythological traditions of the Greek world.

Confirmation of a Mycenaean presence in the lower Acheron comes from a well known and extensively excavated site on the hill known locally as Xylokastró, above the modern village of Mesopotamos (Figure 1.3). The site, commonly referred to as Ephyra, its presumed ancient name (Thuc. 1.46), boasts an enclosure wall widely held to emulate, or be a genuine example of, cyclopean masonry of Mycenaean type. Excavations comprising more than a dozen field seasons produced substantial amounts of imported Mycenaean pottery. Just 15 km along the Ionian coastline to the north, a small but finely executed tholos tomb, unquestionably of Mycenaean design, was discovered in the 1930s on a slope overlooking Lichnos Bay at Kiperi near Parga (Figure 1.2). These manifestations of Mycenaean interest are believed to be relics of a time when merchants plied an Adriatic sea route from southern Greece to the Ionian coast, continuing north into the Adriatic region, and west to Italy. For lack of data, the extent and intensity of the Mycenaean involvement in Epirus are unknown, as is the impact of Mycenaean presence on local inhabitants; yet, these are precisely the sorts of questions for which problem-oriented surface survey is designed.

Geomorphological issues

The reconstruction of the changing topography of the lower Acheron drainage is crucial to many historical questions. One of the main issues bearing on the Bronze Age is the position of the coastline, and the extent of a bay that opened

into the region of the Acheron mouth in antiquity. It has long been known that the current wetlands and drained agricultural fields of the Acheron mouth were occupied in antiquity by a wide bay in which large fleets were anchored (Dakaris 1971a: 5; Thuc. 1.46; Cass. Dio 50.12.2; Anna Komnena, *Alex.* 4.33). The extent and characteristics of the bay have significant implications for understanding Mycenaean interest in the region, and for the range of resources available to local inhabitants (Chapter 7).

The lower Acheron drainage as a reasonably defined environmental zone

Although characterized by considerable ecological diversity, the lower Acheron drainage is fairly circumscribed by the Ionian Sea on the west, and by high, rugged hills on the south and east (Figure 1.4). Only from the north and northwest is overland access via the valleys of the Vouvos and Kokytos effectively unobstructed. Some effort is required to enter the plain, and the contrast with the environmental zones surrounding it is immediately apparent. The lower Acheron drainage can therefore be viewed as a natural environmental unit for the purposes of analysis.

Suitability for surface reconnaissance

A high percentage of the terrain in the plain, on low hills, and on the surrounding slopes offered reasonable opportunities for surface survey. Typically, the vegetation of the hills and slopes consists of phrygana, maquis, or degraded maquis cover, including phlomis (*asphaka* in modern Greek), acanthus, Kermes oak, and an assortment of low bushes and grasses. In these conditions, ground visibility ranged from poor, where plants were densely packed, to excellent, where vegetation was sparse. At most of these locations, visibility was at least moderate. By contrast, remnants of dense coastal maquis persist on a few low hills and ridges. Such locations are blanketed by thick growths of Kermes oak, holm oak, arbutus, phlomis, and other low trees, bushes, and grasses, rendering them impassable and reducing ground visibility to zero. Furthermore, a few of the hills rising from the plain are built over so thoroughly by modern settlements that little or no open terrain remained for exploration; e.g., one small hill in the plain near Kastri is now almost entirely covered by the concrete surfaces of the village of Stavrochori (Figure 1.3). Overall, however, the lower Acheron drainage offered some of the least rugged, more amenable terrain for surface survey to be found in the Nikopolis Project study area.

Ongoing loss of archaeological resources in the face of modern development

As is happening everywhere in Greece, archaeological sites in the lower Acheron valley are being destroyed at an alarming rate as modern development pushes inexorably into previously undisturbed locales. A gradual transformation of the landscape is being accomplished, primarily by large-scale public agricultural works and the construction of new housing for the expansion of

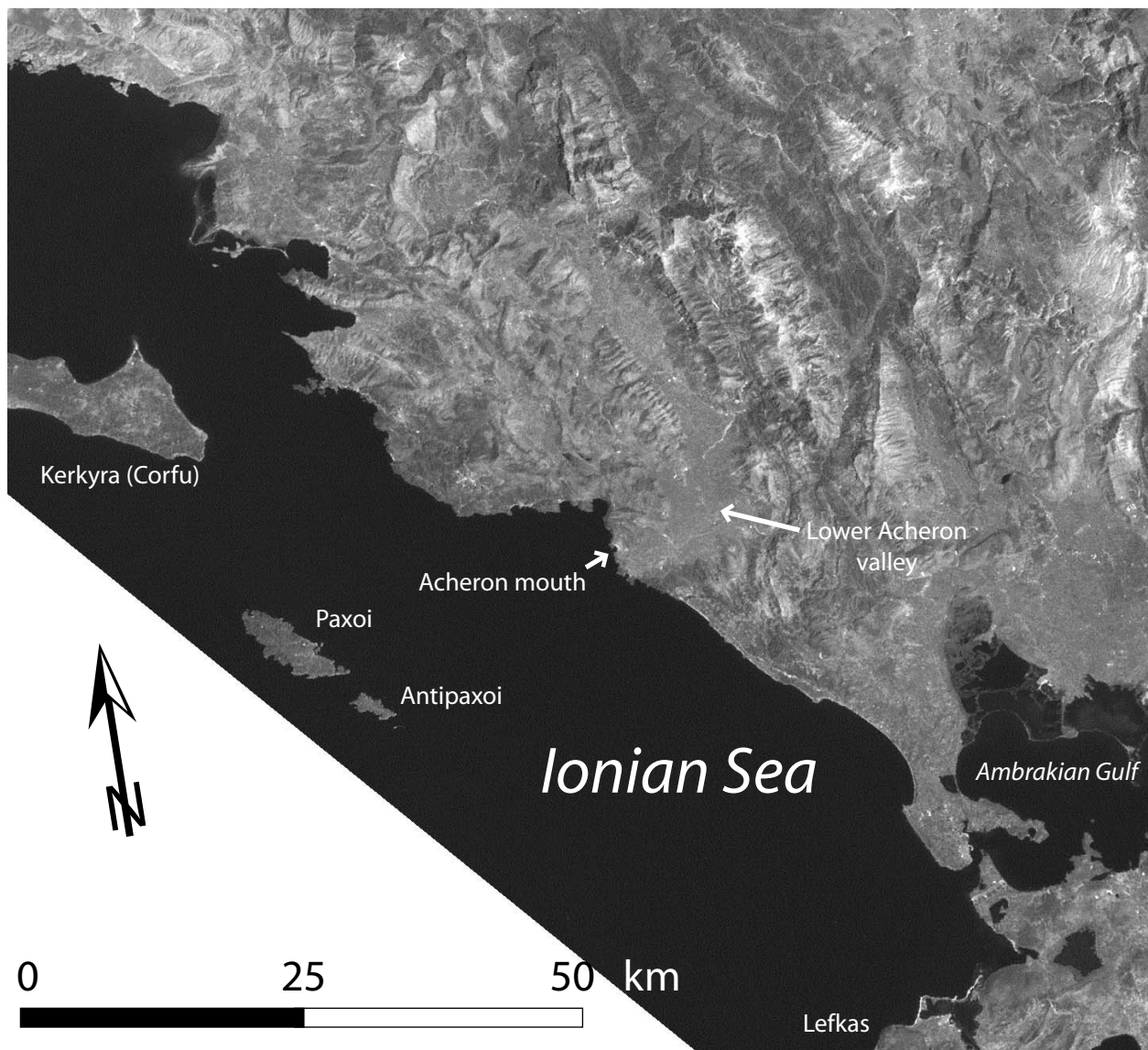


Figure 1.4 Satellite image of Epirus and neighboring lands. This image shows well the circumscription of the lower Acheron region by the sea and the surrounding hills and mountains. Courtesy Mark R. Besonen.

settlements and country villas; bulldozers are the preferred instrument of destruction.

Among the many piecemeal changes taking place, two notable undertakings have had obvious impact on the archaeological resources of the region. On the eastern slopes overlooking the plain, a major European Community-sponsored aqueduct, extending from the vicinity of Glyki to the southeastern corner of the valley, has cut a swath of destruction through the lower elevations. The cuttings for the aqueduct and the maze of access roads bulldozed to service it destroyed much of a large Bronze Age site near the village of Vouvopotamos, and are likely to have destroyed other sites that will never be known. An even more insidious process is transforming the low hills bordering the southwest corner of the Acheron plain near the river mouth. Bulldozers have begun to push roads through the low elevations on which remnants of dense coastal maquis are preserved, as a prelude to the construction of villas. The transformation of the hills south

of Valanidorrachi is nothing short of shocking: in 1995, survey team leaders were unable to recognize the landscape on which they had worked in the previous two seasons. Several archaeological sites, dating from Palaeolithic to Roman times, are known to have been destroyed.

It must be acknowledged that the opening up of these terrains is a double-edged sword: archaeological sites that would otherwise go undetected are revealed in just this way. But I would argue that the advantages are short-lived; for the remains brought to the surface are often moved away to dumps, and the sites that produced them built over. Since these events are an expected outcome of development, over which little control can be exercised, the urgency of extracting as much information as possible about ancient landscapes is great. The survey tracts walked in the lower Acheron valley as part of the Nikopolis Project allowed for a reasonable sampling of the locations at highest risk of destruction.

THE ARCHAEOLOGICAL PROBLEM

											90 F 10 <	20 < 80 >
											70 F 10 < 20 >	
				60 F 30 < 10 >	25 F 75 <	30 F 45 < 25 >	15 F 35 < 50 >	F	F	F	25 < 75 >	
				>	80 F 15 < 5 >	70 F 30 <	45 F 50 < 5 >	F	F	F	20 < 80 >	
	C	10 < 90 >	10 < 90 >	>	50 F 30 < 20 >	F	90 F 10 <	80 F 20 <	F	F	40 < 60 >	
	C	10 < 90 >	50 < 50 >	90 < 10 >	25 F 45 < 30 >	F	F	50 F 50 <	F	F	70 F 10 < 20 >	8 < 93 >
	C	30 < 35 > 35 S	25 < 70 > 5 S	60 < 40 >	35 F 65 <	F	F	90 F 10 <	75 F 25 <	F	F	50 < 50 >
C	S	S	S	50 F 40 < 10 >	45 F 55 <	F	F	F	90 F 10 <	F	F	
C	S	S	S	S	20 F 80 <	80 F 20 <	F	F	80 F 20 <	F	F	
C	S	F	F	F	F	F	F	F	15 F 60 < 25 >	35 F 40 < 25 >	80 F 17 < 3 >	
C	15 S 85 C	F	65 F 35 <	35 F 65 <	60 F 40 <	95 F 5 <	55 F 40 < 5 >	75 F 20 < 5 >	5 F 30 < 65 >	>	5 F 20 < 75 >	
	C	C	C	60 < 40 >	10 < 90 >	50 < 50 >	15 < 85 >	20 < 80 >	>	>	>	
		C	C									

Figure 1.5 Grid of the lower Acheron region as selected for this study, classified by topographic type. C = coastal; S = swamp/bay; F = floodplain; < = foothills less than 100 masl; > = high hills greater than 100 masl.

Table 1.2 Total and modified survey area by topographic type, lower Acheron valley.

Topographic class	Total area(sq km)	Eliminated(sq km)	Modified area(sq km)
Floodplain	53.40	53.40	0
Coastal	6.85	0	6.85
Swamp/bay	8.55	8.55	0
Foothills (< 100 masl)	17.64	0	17.64
High hills (> 100 masl)	22.56	0	22.56
Total	109.0	61.95	47.05

Conformity with the Nikopolis Project research agenda

The lower Acheron valley was a focus of human activity in many periods in addition to the Late Bronze Age: for example, copious remains of activity from Palaeolithic times were found in the valley; a number of fortified sites and garrisons attest to the importance of the area in the Hellenistic period; and the bay on the Ionian Sea figured in the Battle of Syvota at the opening of the Peloponnesian War, and in preparations for the confrontation of Octavian and Marc Antony off Actium in 31 B.C. As a result, the research interests of several colleagues, and of the Project in general, converged on the lower Acheron drainage. Because many research questions concerning the region were included in the Project's research design, considerable resources were directed to its exploration. My analysis of the lower Acheron region benefited from the information obtained by all of the components of the Nikopolis Project.

Definition of the Study Area and Strategy for Sampling

Delimiting the area that would serve as the focus of this research required a coherent problem orientation that would guide the fieldwork, and a strategy for selecting the boundaries of the study area and the survey units that would be walked within it. The study area as it ultimately took shape reflected to varying degrees the problems defining the research, general theoretical requirements of survey sampling, and practical and logistical considerations. Setting the northern and western limits presented no problem: the Ionian Sea borders the area on the west, and the northern limit was formed by the boundary between the nomoi of Preveza and Thesprotia, which runs in a northeast to southwest direction, cutting off the floodplain of the Acheron River south of the villages of Glyki and Potamia. The eastern and southern boundaries in the rugged hill country overlooking the plain were simply set in such a way that a representative swath of slopes and upland zones would be incorporated into the survey area. The survey area resulting from these considerations covered approximately 109 sq km.

It was immediately apparent that the chosen area was far too large to hope to survey in its entirety in a systematic way, especially in consideration of the many survey priorities of the Nikopolis Project throughout the nomos. A sampling scheme was needed to identify those survey locations that would provide answers to the research questions, while at the same time producing a quantitatively and qualitatively valid sample. To create such a scheme, I selected a simple and easily identified attribute—topography or terrain—that I predicted should correlate positively with environmental and resource diversity. I created five classes: floodplain, coastal zone, swamp/bay, foothills (< 100 masl), and high hills (> 100 masl); and proceeded to classify the potential study area by calculating for each 1-sq-km grid square on the 1:50,000 topographic map the percentage of each terrain class (Figure 1.5, Table 1.2). By stratifying the sampling universe, I meant

to ensure that survey units would be placed to take a valid sample of each class. The theoretical justification for this strategy, that the full range of human exploitation of the environment can only be captured by taking a meaningful sample of all environmental zones and landscape settings, is widely recognized and applied in modern survey archaeology (Schiffer, Sullivan, and Klinger 1978: 12; Barker 1991a: 3).

The initial placement of survey units was motivated by two main objectives: the investigation of all environmental zones by a stratified judgmental sample, and intensive scrutiny in the vicinity of sites and landscapes of known importance in the Bronze Age. Thus, at a given moment, equal priority might be accorded to survey tracts stretched across a wetlands environmental zone, and intensive survey around a major Bronze Age settlement like Ephyra.

Once survey work began in a given season, scouting trips to the valley confirmed the feasibility of walking the units that had been generated by the sampling design. The sampling strategy was subject to modification based on current information regarding vegetation cover and access, new discoveries, and other factors. One of the more important procedures for determining the placement of survey units consisted in identifying areas that offered little or no hope of success in detecting evidence of ancient activity. Such locations were eliminated from consideration for one or more of the following reasons: restricted access, severe erosion, impenetrable ground cover, or evidence that ancient surfaces were buried deeply under modern deposits. As is apparent in Table 1.2, more than half of the surface of the lower Acheron study area was eliminated from the sample, chiefly because geomorphological analysis showed that: 1) the level plain is mantled in several meters of recent alluvium, and thus offers little or no chance of exposure of Bronze Age material; and 2) the sandy marsh surrounding the present mouth of the Acheron River has been formed in the last few centuries as the shoreline prograded toward the Ionian Sea, precluding the discovery of Bronze Age activity there.

Survey units were placed in the marsh near the Acheron mouth, and in the Acheron plain near the eastern extension of Pountas ridge, in order to test the geomorphological findings. The findings were confirmed, as very little cultural material was observed, and almost nothing from a pre-modern era. The geological coring program demonstrated that the plain was marshy in the Bronze Age also, minimizing the loss of permanent settlements, which would not be expected on the plain itself. As in later eras, the resources of the plain were of great subsistence value, however, and various lines of evidence indicate the resources that were available and how they might have been used (Chapters 7–9).

The effect of the removal of a large percentage of the surface from consideration was to focus exploration on the low hills and slopes, and selected uplands (Table 1.2).

Predictably, the effort to investigate the rugged uplands was limited by logistical concerns. The difficulty of access and the extra time required to drive to and from these often isolated locations made them impractical in light of the efforts of the Nikopolis Project to explore as much of its immense study area as possible in three short seasons. A small portion of the slopes above 100 masl was investigated with survey teams, and to supplement these investigations, I made additional forays, accompanied by one or two interested colleagues. Ultimately, a minimal sample of the highest slopes bordering the lower Acheron plain was achieved, and I was able to use the results of survey in other upland contexts within the nomos as a means of understanding the nature of these environments. The intensification of exploration among the lower slopes and small hills rising from the plain was rewarded with the discovery of numerous new Bronze Age findspots.

and Zhichun Jing. The extensive coring program was undertaken by Mark Besonen, Prof. George “Rip” Rapp, and Jing (Besonen 1997; Besonen, Rapp, and Jing 2003).

Building upon this basic introduction to the study area, I discuss in Chapter 2 the theoretical perspectives that informed my research design, and present several hypotheses to be evaluated. I also summarize the methods by which the environmental and archaeological data were acquired.

Endnotes

1. The Nikopolis Project was a cooperative undertaking of the 12th Ephoreia of Prehistoric and Classical Antiquities, the 8th Ephoreia of Byzantine Antiquities, and Boston University, sponsored by the American School of Classical Studies at Athens, and co-directed by James R. Wiseman (Boston University), Angelika Douzougli and Kostas Zachos (12th Ephoreia of Prehistoric and Classical Antiquities), and Frankiska Kephallonitou (8th Ephoreia of Byzantine Antiquities).

2. For their generous support I wish to thank Dr. Angelika Douzougli and Dr. Konstantinos Zachos of the 12th Ephoreia of Prehistoric and Classical Antiquities, Ioannina, and Dr. Frankiska Kephallonitou of the 8th Ephoreia of Byzantine Antiquities, Ioannina. For permission to view material for comparative purposes, I am grateful to the following scholars: Prof. Thanasis Papadopoulos (Ephyra); the late Prof. Sotirios Dakaris (Dodona); the late Prof. Ioulia Vokotopoulou (Vitsa); Dr. Angelika Douzougli (Doliana, Kiperi tholos tomb); and Dr. Konstantinos Zachos (Krya).

3. For their hospitality and generosity in showing me unpublished material, I gratefully acknowledge: at Thermon, Prof. Iannis Papapostolou; at the headquarters of the Konispol Cave Project in Butrint, Profs. Muzafer Korkuti and Karl Petruso, and Mr. Lorenc Bejko.

4. Most of the geomorphological observations were made by Prof. Tjeerd van Andel, as well as Drs. Richard Dunn

Chapter 2: Theoretical Perspectives and Methodological Approaches

Theoretical Perspectives

In this work, I adopt a theoretical approach inspired by the French school of *Annales* history; more specifically, a modified Braudelian perspective.¹ Because the *Annales* rubric encompasses a tremendous diversity of perspectives and approaches, there exists no coherent body of theory or any specific set of models that all *Annales* use as simplified constructions of more complex phenomena (Bulliet 1992). Thus, to say that one adopts an *Annales* perspective requires elaboration.

Three generations of *Annales* historians have built upon the foundational work of Lucien Febvre and Marc Bloch in the second quarter of the 20th century (Knapp 1992a: 5). The *Annales* tradition initially materialized as a reaction against the “Rankean” history then prevailing in France—a narrowly focused attempt to reconstruct the past through historical archives. Febvre and Bloch emphasized instead a holistic or “total” approach to history that privileged long-term patterns over short-term events; global over provincial outlooks; economy and society over political actions; quantitative trends over chronological narrative; and a disciplinary rapprochement with the social sciences (Knapp 1992a: 4–5). The *Annales* historian who has had the most profound influence on archaeological thought is Fernand Braudel, a student of Febvre who came to dominate *Annales* thought during the 1960s and 1970s. The work that awoke archaeologists to the *Annales* movement was Braudel’s *The Mediterranean and the Mediterranean World in the Age of Philip II* (1972). In it, Braudel outlines his tripartite scheme for the movements of history: long-term geographical and environmental structures (the *longue durée*); medium-term social and economic cycles (the *moyenne durée*; also known as *conjunctures*, rendered in English “conjunctures”); and short-term events and actions of individuals (*événements* or *l’histoire événementielle*) (Knapp 1992a: 6; Bintliff 1991a). Braudel proposed that the historical development of societies is embodied in these multiple, hierarchical time scales, as processes operating contemporaneously, but existing at very different temporal rhythms (Bintliff 1991a: 6–7). Historical continuity and change result from the interplay of these temporalities upon society.

The *longue durée* refers to the timeless rhythms of the natural environment, and the effect of the constraints and possibilities it presents to human development. At the scale of millennia, specific events and changes of the *longue durée* are nearly imperceptible; instead, persistent, stable technologies and ideologies (*mentalités*) are the perceptible features of culture. The structures of the long term are of particular interest to prehistorians, since they are rarely able to discern short-term events, and even medium-term developments are usually of several centuries’ duration or

longer (Barker 1991b: 39). The interplay of long- and medium-term processes can, however, be identified in the archaeological record of prehistory, and profitably studied.

In the medium term, conjunctures may operate over decades, generations, or even a few centuries. Like long-term developments, conjunctures are structural—collective or impersonal rather than involving individuals or single events—but it is often possible to date and chronicle them. Among these forces are those that may be considered part of structural history: demographic and economic cycles, or the rise and fall of socio-political systems (Bintliff 1991a: 7). In central Mexico, post-Teotihuacan urbanization, and the rise and fall of the Toltec, Tepanec, and Aztec empires, have been identified as cyclical, conjunctural phenomena (Smith 1992b: 69). These and other structures of the medium term also exercise a constraining and enabling influence over individuals and communities.

Finally, there is the short-term history of events (*événements*), the record of personalities and actions that is something like the Great Men and Battles approach of traditional political history (Barker 1991a: 1). Events are held to be influenced by patterns of the medium and long term, i.e., particular events, or the prominence of certain individuals, often cannot be divorced from longer-term, structural conditions that favored their occurrence or prominence.

Historians and archaeologists have leveled various criticisms at Braudel’s tripartite scheme. The notion that environments, and human adaptations to them, are static and unchanging on a millennial scale, was contested by Karl Butzer, whose dynamic ecosystem perspective emphasizes an interactive, dynamic process operating at all temporal scales between humans and the environments they inhabit (Butzer 1982; Smith 1992a: 25). Most archaeologists consequently reject Braudel’s structural-ecological determinism. At the other end of the temporal continuum, Braudel’s subordination of individual action and historical events to deep structures of the long and medium term has been widely criticized. Braudel (1972: 502) states: “By temperament I am a structuralist, little attracted by events and only partly by conjunctures.” But as Knapp (1992a: 6) notes, “human actions are not simply responses to deep structures,” and the post-processual critique in archaeology aims to rehabilitate the individual and emphasizes the impact of social actions that may subvert or even alter prevailing structures. Although Braudel emphasizes structure and continuity, other *Annales* historians have developed alternative schemes that permit a greater role for the individual and for catastrophic discontinuity (Le Roy Ladurie 1979; see Knapp 1992a: 6).

Historians in particular are sometimes skeptical that the Braudelian model offers anything new or innovative to archaeologists. To Horden and Purcell (2000: 542), "...it remains unclear what Braudel has to offer archaeologists beyond encouragement to relate, in their analyses, the long term to the short term"; Bulliet (1992: 131–132) comments that "...there is ultimately nothing in the annales school that can take archaeologists much farther intellectually than they have already gone." The appeal of annales history—Braudelian, at any rate—to archaeologists rests partly in many shared research concerns that are couched in terms familiar to archaeologists. The operation of phenomena at multiple time scales (synchronous/diachronic), and a primary focus on continuity and change, evoke the sorts of problems that frame much archaeological research. Braudel's annales approach offers theoretical flexibility in determining the appropriate chronological, geographical, and vertical (social) scales for analysis. The imprecision of Braudel's temporal scales echoes the coarse chronological resolution that archaeologists often confront, while also offering a way to make meaningful statements at the greatest possible level of chronological control.

The Braudelian approach finds a striking resonance with the goals and methods of the kind of regional, diachronic, and multidisciplinary research that is embodied in landscape archaeology (e.g., Ashmore and Knapp 1999). (It is no coincidence that the partial title of a book reporting on one such archaeological project is *Landscape Archaeology as Long-Term History* [Cherry, Davis, and Mantzourani 1991], echoing the title of Ian Hodder's edited volume *Archaeology as Long-Term History* [1987].) Although landscape archaeology accommodates diverse theoretical and methodological approaches, most projects undertaken in its name share certain philosophical perspectives. The dynamic interaction of humans and the environments they inhabit and exploit is studied by archaeologists and natural scientists at multiple time scales, corresponding to and even transcending Braudel's long, medium, and short term. The regional geographical focus permits the inclusion of multiple ecological zones, as well as a representative cross-section of the range of human settlements and activities to be found in a region. Archaeology uniquely, and most effectively in regional mode, is able to recover non-elite individuals and groups invisible in most written history. Although this was not a primary concern to Braudel, recent trends in archaeology, such as post-processualism and cognitive processualism, have sought to recover the thoughts and actions of individuals in both historical and prehistoric contexts (e.g., Hodder 1991: 6–10; Bradley 2000; Renfrew and Zubrow 1994). For some annalists, however, the conditions under which voiceless masses lived and died have been of central importance. Emmanuel Le Roy Ladurie, a student of Braudel, relegated the most cherished achievements of the Renaissance to insignificance because in his estimation they had almost no effect on the lives of non-elite rural dwellers (Le Roy Ladurie 2002; Bintliff 1999: 133–134).

Contra Horden and Purcell, an annales framework offers archaeologists the potential for enhanced explanatory power. By collecting data at regional levels, we are able to recognize processes operating at diverse geographical, temporal, and social scales. Drawing upon the annales insight that history is forged in the interplay of these forces, we may identify and make explicit the causal relationships between structures and the decisions and actions of individuals; that is, we may construct a structure-contingency explanation. In the words of John Bintliff (1991a: 8), the utility of annales history for archaeologists rests in the potential to reconcile, in a single theoretical framework, "...the general and particular, the event and the millennial trend, the individual and the community or society." Because these processes operate simultaneously, developments that are visible in the archaeological record can be explained as the outcomes of complex interactions of environments, traditions, technologies, cycles, and individual action. Unlike historians, however, archaeologists bear the additional burden of sorting out natural and cultural post-depositional processes that alter the structure of the archaeological material record.

The tension between structure and contingency is by no means limited to historical and archaeological thought. In the field of evolutionary biology, the "punctuated equilibrium" model has forged a new consensus on the processes of the evolution of species on Earth (Eldredge and Gould 1972; Gould and Eldredge 1993; Gould 1995: 133–144). The concept of punctuated equilibrium rejects the notion of a linear, directional evolution of species according to gradual and cumulative processes of natural selection, suggesting instead that periods of very short, and in geological terms sudden, change "punctuate" the normal condition of stability or "stasis." Species tend to remain the same for very long periods of time between speciation and extinction events, and therefore evolution is characterized not by constant change, but by general stability that is occasionally interrupted by change or "impact." The causes and circumstances of change often reflect chance and local conditions; that is, they are contingent. On similar principles, the adherents of punctationalist/contingency models and annales history deny the existence of a linear progression from less to more fit, or from less to more complex, the former in biological systems and the latter in human culture.

Gould (1999) shows that the timeless predictability of structure and the narrative history of unpredictable, contingent events involve complementary but fundamentally different modes of explanation that are powerfully scale-dependent. On human time scales, structural explanations emphasize timeless forces of nature that structure human adaptive behaviors in predictable ways. Contingent explanations address observable outcomes by connecting a series of antecedent events, which themselves are not predictable and thus can only be identified in hindsight. Moreover, although long-term

anatomical stability in species over thousands or millions of years is real and to some degree structurally determined, the apparent stability of long expanses of human time may result more from a lack of resolution than from true cultural stasis. The two modes of explanation are complementary because history unfolds through the interplay of structure and contingency. This simple observation is equally fundamental to modern archaeology, annales history, and evolutionary biology.

I seek to apply a Braudelian approach to the case of Bronze Age southern Epirus, freed from the strictures of Braudel's environmental determinism and his indifference to events and individual actors. In their place, I favor a structure-contingency perspective that accords equal weight to deep structures and contingent historical cycles, individuals, and events. It transpires, however, that single events and individuals are virtually irretrievable from the Epirote Bronze Age, and this study thus focuses on the long and medium term.

Natural Environment and the *Longue Durée* in the Southern Epirote Bronze Age

It is clear that humans both adapt to and shape their natural surroundings. The natural environment imposes certain constraints, and limits to adaptation: humans cannot survive without access to fresh water, nor can they profitably build villages in frequently flooded marshes. In antiquity, little control could be exercised over temperature, rainfall, or the length of the growing season. Yet environments also present adaptive opportunities within which humans may have considerable latitude to make specific choices, e.g., locating their settlements or selecting a range of resources to exploit. The benefits and liabilities of a given landscape must be evaluated by potential inhabitants for suitability of climate, soils, water supply, availability of plant and animal resources, and other salient characteristics. Adaptive strategies and novel technologies may allow human communities to unlock latent fertility even in inhospitable climates, and the anthropogenic effects on the landscape may be profound. For instance, irrigation technology unleashed the great fertility of the Mesopotamian lowlands in the Bronze Age, a development that did not merely alter the relationship of man and environment, but permitted the population growth that ultimately fueled the emergence of Sumerian civilization.

Southwestern Epirus, and conspicuously the lower Acheron valley, possessed in the Bronze Age a fertile and well-watered ecosystem, and this fact may partly account for the difficulty of identifying phenomena at shorter temporal scales than the deep structures of the *longue durée*. Applied to the Bronze Age in Epirus, the concept of punctuated equilibrium asserts a deep structural relationship between humans and their environment that is characterized by stability rather than constant, directional change. This relationship might be described as a "natural state," in which the rhythms of human life are closely in tune with

the environment, and affected by natural cycles, both normal seasonal variation and more anomalous fluctuations (of shorter or longer duration)—a dynamic relationship in terms of human-environment interaction, but characterized by a self-regulating equilibrium. The setting of the lower Acheron drainage favored such a relationship, for two reasons in particular: 1) the geographical isolation of the region for most of the Bronze Age; and 2) the mild climate and favorable ecology. Short-term environmental fluctuations, which are not at present detectable, were smoothed out by the bountiful ecology of the lower Acheron floodplain—most significantly, the availability of copious fresh water at all seasons as a consequence of heavy rainfall, rivers, and springs (see Chapter 7). That abundance, together with a mild climate, ensured the availability of plant and animal resources year-round. Subsistence took on spatial and temporal dimensions for each community, as distinct environmental niches across the drainage area were exploited at various times of the year.

Rather than a constant development toward a more complex or "fit" society, the relationship between culture and environment in the Bronze Age was characterized by long-term stability, which was interrupted by occasional "impacts" that altered the relationship in either a temporary or more enduring fashion. Several plausible sources of change can be identified: 1) technologies that enhance the extractive power of subsistence practices or alter the resource emphasis, such as the domestication of plants and animals or the introduction of metals; 2) direct impacts on the availability of resources, such as climatic changes or catastrophic soil loss; and 3) exogenous agents that alter demographics through settlement or warfare, or offer new economic opportunities. Impacts of these sorts are likely to occur periodically as medium-term conjunctures, and some may lead to significant changes in social and economic relationships among individuals and communities, e.g., by encouraging nucleation of settlement or economic specialization, but they do not always cause greater social complexity to permeate society, nor are they always enduring. An interesting case study of a conjuncture in the lower Acheron valley is the impact of Mycenaean presence in the valley for roughly 200 years. Only tantalizing hints of other medium-term processes are perceptible on present evidence; instead it is the *longue durée* that is prominent in Epirote prehistory.

Mycenaean Presence as a Medium-Term Conjuncture

In this book I describe in detail one principal conjuncture—the appearance and subsequent settlement of Mycenaean Greeks on the Epirote coast for some period within the 15th–13th centuries B.C. To be sure, other influences entered Epirus from the north and elsewhere during the Bronze Age, but their nature and timing are considerably more ambiguous. The Mycenaean presence endured for no more than two centuries, and perhaps less;

and its geographical extent was limited to a narrow swath of the coastline surrounding the mouth of the Acheron River.² This swath appears to have extended no more than 15 km from the Acheron mouth in the south to a tholos tomb and presumed settlement near Parga in the north; and its inland extension to the east was not more than seven or eight km to the fortified site of Kastriza. From this coastal foothold, commodities and information flowed inland along river valleys and the mainly north–south passes through the mountainous interior. I shall propose a colonial/trade model to explain the Mycenaean activity in the Acheron region, and I shall argue that during this relatively brief historical cycle, the interaction between Mycenaeans and natives effected a transformation in the nature of social and economic organization among a geographically and numerically limited indigenous population (see Tartaron 2001 for an economic analysis).

Yet the everyday lives of all but a few Epirotes were not changed at all by the Mycenaean interlude. Surface survey and excavation data indicate a limited role for Mycenaean material culture beyond the coastal swath: the distribution of Mycenaean objects in the interior of Epirus traces the movement of goods and ideas along routes of communication and exchange, and indicates that such exotic items may have had limited circulation among higher-status individuals and families. These are movable objects, however; only in the coastal Acheron region are there monumental constructions of Mycenaean type that surely indicate the actual presence of Mycenaean engineers and masons. Some Mycenaean polity, as yet unidentified, had a strong interest in establishing a coastal foothold in southwestern Epirus. The transformations failed to persist once the Mycenaeans abandoned the region, emphasizing their superficial or ephemeral character when placed alongside the deep structural timelessness of the Epirote environment and the traditional technologies and mentalities by which humans adapted to it.

Mycenaean settlement at the Acheron mouth was focused on the citadel-like settlement known as Ephyra. This fortified site has been cast by most scholars as a maritime station servicing the Adriatic Sea trade route connecting the Mycenaean Greek world with Italy, the Balkans, and central Europe. There has been no clear consensus on, or an adequate demonstration of, the nature and function of the site. Was it founded and built by colonists from southern Greece, or by local residents wishing to emulate the material culture of the Mycenaean world? Was the site merely a resupply station, with little intercourse with local communities beyond the acquisition of required goods; or did a full-blown emporium develop, into which local communities were integrated, with potential implications for social organization and economic strategies? These and other questions have prompted much speculation on the basis of little evidence.

The most comprehensive model of Ephyra and the effects of Mycenaean influence on local inhabitants is that

presented by Kostas Soueref (1986: 168–172). He held the walled settlement at Ephyra, and the tholos tomb near Parga, to represent organized territorial units of Mycenaean type. Around these small centers, economic interrelationships developed between the Mycenaeans living within the walls and native communities living around the bay and the plain. Economic specialization arose in support of the commercial activity at the port, and the local population provided a link to markets and products of the interior through the movement of migrating pastoralists. Soueref also speculated that changes in the structure of the economy precipitated social differentiation, and ultimately the emergence of distinct social classes. I have come to concur with much of this model, which was based on excavated finds from Ephyra and Kiperi, the former so far documented only in a series of preliminary reports, as well as observations on mythological traditions and historical information. The geomorphological and surface survey data obtained by the Nikopolis Project provide firmer ground on which the nature and function of the putative “centers” may be assessed. With this enhanced information I am able to go farther in assessing the Mycenaean conjuncture in light of newly discovered Late Bronze Age sites in the lower Acheron mouth; and in fleshing out the interactions between Mycenaeans and natives.

In examining the Mycenaean phenomenon, one may adopt divergent attitudes within the *Annales* framework by emphasizing the discontinuity of the social and economic changes wrought by the Mycenaeans on one hand, or the overwhelming continuity of Epirote existence in spite of Mycenaean presence, on the other. A modified Braudel approach would encourage us to find causal relationships among the factors of southwestern Epirus’ bountiful ecology, the segmentary organization and simple agro-pastoral lifeways of the native coastal dwellers, and the opportunities and conflicts presented by Mycenaean Greeks who were attracted to the area, and who wished to facilitate the exploitation of certain resources there. From another perspective, following Le Roy Ladurie we might perceive the encounter in the Acheron region as essentially meaningless to the course of the later prehistory of Epirus, since the vast majority of inhabitants remained entirely unaffected.

Models of Bronze Age Settlement and Subsistence

Based on the results of prior research and those obtained by the Nikopolis Project, I propose several models to explain the material remains of southwestern Epirus in terms of social structures and cultural processes. These models, developed and evaluated in Chapters 8 and 9, center on settlement history and subsistence economy.

In terms of settlement history, I hypothesize that the lower Acheron valley was relatively thickly settled in the Late Bronze Age, but only sparsely populated in the earlier stages of the Bronze Age. Certain areas, such as the

Acheron floodplain, were unavailable for permanent occupation on account of year-round wetness, and as a result permanent settlements were focused on the low hills in the plain and the slopes surrounding it. Short-term activity areas are also discernible in the surface archaeological record. Several different types of sites, with apparently diverse functions, were discovered on the surface. Although the chronology of the Bronze Age sites is not precise, a concentration of large settlements ringed the wide bay on the Ionian coast in the Late Bronze Age.

In the area of subsistence economy, I advance the hypothesis that a diversified subsistence strategy was pursued, reflecting the seasonality of resource availability and the exploitation of a variety of ecological niches within the study area. A stable schedule of resource use and subsistence activities was maintained, and the nature and scope of subsistence practices had significant implications for land use.

In many respects, these statements question long-accepted models. Often, such models, and the assumptions on which they are founded, work their way into the literature and become validated and reinforced by constant repetition, until they are simply accepted as “the way it really happened.” In the present study I reconsider, with reference to the expanded database and to recent theoretical discussions among archaeologists, the widely held view that the Bronze Age economy of Epirus was based on long-distance, seasonally transhumant pastoralism.

It has long been assumed that the prehistoric economy in Epirus was based on long-distance transhumance with herds of sheep and goats on a “winter in the plains, summer in the mountains” schedule (Dakaris 1972a: 54). The assumptions that underlie this model have two main sources: environmental determinism (the rugged topography, presumed harsh climate, and climatic contrast between uplands and lowlands preordained this adaptation), and analogy with modern transhumant societies (the so-called “Sarakatsani model”). Both assumptions are in need of careful reconsideration. In recent years, the antiquity of long-distance, transhumant pastoralism as an economic strategy has been called into question (e.g., Halstead 1981, 1987; Cherry 1988; for opposing views, see Geddes 1983; Greenfield 1988), and many observers find little evidence for this adaptation in prehistory. The paleoenvironmental and archaeological data from southwestern Epirus can be injected into an assessment of this model, and into the creation of alternative models of prehistoric economic strategies. Arguing from the emerging evidence for paleoenvironment, land use, settlement types and locations, landscape changes, and foreign influences, I conclude that a subsistence economy based on mixed farming and short-distance, vertical transhumant pastoralism characterized the lower Acheron valley, and perhaps much of the rest of Epirus as well.

Methods: Archaeological Surface Survey

The methodological outlook of this study is embodied in the concepts of landscape archaeology, which in its early incarnations in the 1980s and early 1990s was concerned primarily with a processual investigation of “...the interactive biological and cultural aspects of human existence within an environmental context” (Kardulias 1994b: 10; see especially Rossignol and Wandsnider 1992). More recently, landscape archaeology has embraced not only the tangible (topography, environment, artifacts, and features), but also the intangible (social action, symbolism, perceptions of space and place), clearly under the influence of social theory, cognitive processualism, and other post-positivist movements. As practiced in the Mediterranean area, landscape archaeology integrates excavation, systematic surface survey, paleoenvironmental study, and other methods of inquiry to reveal the spatial manifestations of an array of human activities on a regional scale (e.g., Cherry, Davis, and Mantzourani 1991; Kardulias 1994a). As noted above, these methods furnish data well suited to the explication of social phenomena at multiple spatial and temporal scales. From its inception, the Nikopolis Project adopted explicitly regional and environmental approaches to the past (Wiseman 1991).

The bulk of the new data upon which this study is based was generated by the Nikopolis Project surface survey. In response to the immensity of the study area (approximately 1,200 sq km) and the lack of prior systematic reconnaissance, a survey methodology incorporating both extensive and intensive methods was adopted. The intensive survey methods were modeled after those developed in Greece over the last three decades, augmented and modified to suit the Epirote landscape. Particularly influential were the intensive surveys of the Argolid Exploration Project (Jameson et al. 1994); the Nemea Valley Archaeological Project (Cherry et al. 1988; Wright et al. 1990); the Cambridge/Bradford Boeotian Expedition (Bintliff 1985; Bintliff and Snodgrass 1985); and the Berbati-Limnes Archaeological Survey (Wells, Runnels, and Zangger 1990; Wells and Runnels 1996). Because the quality of the data from which models and syntheses are constructed depends on the manner in which they were collected, our field methods are described briefly here (for a detailed description of these methods, see Tartaron 2003).

Intensive survey field methods

The basic unit of investigation was the *tract*, by which landscapes of both known and unknown site potential were explored. The tract was defined as a parcel of land of varying size and shape, the limits of which were determined by features such as field borders, fences, roads, or a maximum size guideline of roughly two hectares. The terrain of the tract normally exhibited relative uniformity of vegetation, visibility, and modern land use. Tracts were

Rev. June 30, 1993

The Nikopolis Project Archaeological Survey Tract Form

Tract #		Date		Recorded by	
1/50,000 Map		1/5000 sheet		Elevation	
Tract Size (meters)	X	Visibility (1–10) 1=poor; 10=excellent		Spacing Interval and Direction	
Walking Order			GPS Reading		
Associated Site/Scatter #s			Sample #s		

ARTIFACT COUNTS:

Other (specify):

Sherds _____
 Roofiles _____
 Flaked Stone _____
 Ground Stone _____
 Metal _____

Notebook Refs _____ Photographs _____

Inventoried
 Artifacts _____

Sketch map of tract location. North should always be up. Include locations of adjacent roads, villages, known sites, contiguous tracts, etc. as reference points.

Figure 2.1 Nikopolis Project survey tract form.

THEORETICAL PERSPECTIVES AND METHODOLOGICAL APPROACHES

walked by small teams, typically of five or six persons, composed of a team leader, a graduate student assistant, and three or four undergraduate students.

A tract was begun by lining up the crew at the desired spacing interval—normally five meters—and proceeding through the selected parcel of land in parallel lines. Each surveyor was responsible for inspecting the ground on either side of his or her line for cultural materials. Each team member carried a tally counter or “clicker” on which to record the quantity of artifacts, clicking once for each artifact observed. Whereas all artifacts were counted, only those considered *diagnostic* were collected from the surface, and retained in plastic collection bags. Generally, diagnostic artifacts were those that provided some information about the form, date, or other important property of the original object; for our purposes, this guideline entailed the collection of all pottery fragments except undecorated body sherds, all fragments of flaked and ground stone tools, a sampling of bricks and tiles, and all other artifacts.

As a means of maintaining close control over the spatial distribution of material in the tract, counts were recorded for each category of artifact at 30-meter intervals. This simple expedient yielded grids showing variations in artifact density by artifact type across the landscape, providing a wealth of comparative information for off-site locations. At the same time that counts were recorded, the team leader used a field notebook to make observations concerning the tract’s environmental and geomorphological context, chronological patterns in the artifact distributions, and so forth.

At the conclusion of the tract, the team filled out a pre-printed form (Figure 2.1) on which the location and size of the tract, ground visibility, details of the survey procedures, and the results obtained were summarized. Photographs of the tract and its setting were taken, and the tract was plotted on the appropriate 1:5,000 topographic map. Artifacts were sorted and bagged by type (pottery, lithics, glass, etc.), with sample tags recording contextual information placed in each bag.

In the course of walking tracts, survey teams frequently encountered anomalously dense artifact scatters or isolated standing architecture. Many of these did not correspond to the traditional conception of a “site,” which typically meant the obtrusive remains of large settlements, cemeteries, or isolated structures. Recognition that the traditional definition fails to accommodate many forms of human activity, the remains of which are discernible on the landscape, encouraged the emergence and development of intensive survey techniques, which in turn forced a reconsideration of the spatial implications of human activity, as ever smaller and less clustered loci came to light. Sites were defined and redefined in relative terms (e.g., as density peaks against a background of artifacts spread across the landscape: Cherry, Davis, and

Mantzourani 1991: 21); in absolute terms (e.g., determined by the number of artifacts per square meter: Doelle 1977: 202); or even rejected altogether (Thomas 1975; Foley 1981). The recognition of focal points of human activity on the landscape is more an interpretive than an observational exercise (Cherry 1984: 119; Dunnell 1992), and each project must therefore adopt an explicit approach to dealing with the scatters encountered by survey teams.

The Nikopolis Project formulated the concept of the *site/scatter* (read “site or scatter”), referring to any spatially definable locus of cultural material characterized by high artifact density relative to the background material distribution. This non-judgmental terminology encompassed everything from a small scatter of flaked stone or an exposed stratigraphic profile to the entire ancient city of Nikopolis. Field teams engaged in the discovery phase of the survey (i.e., tract walking) were expected to identify site/scatters and gather preliminary data about them. Detailed assessments of site formation, size, and function were often deferred to subsequent revisits by special teams made up of senior staff members.

Site/scatters were normally subjected upon discovery to special documentation and collection procedures. The team first determined the approximate extent of the dense scatter of material by designating a notional “center” of the scatter and walking outward in all directions from it; each person placed a flag at the point where the anomalous density appeared to cease. The outlined area was investigated using a method much like tract-walking, except more intensive. The survey interval was reduced to two or three meters, and counts and observations were recorded every ten meters. At very small sites and in certain experimental situations, total collection of surface scatters was carried out. In three field seasons, the Nikopolis Project surface survey designated more than 125 site/scatters of every imaginable size and description.

The investigation of large, complex sites was carried out using a suite of methods, based on the tract concept, that have been developed for surveying the surface of the urban areas of classical Greek poleis (Bintliff and Snodgrass 1988; Alcock 1991). These methods replicate tract procedures, with the addition of supplemental grab samples and/or controlled collections as a way to ensure representative artifact samples and achieve near-total ground coverage. A major “urban survey” was undertaken by the Nikopolis Project at the fortified hill site of Kastri in the lower Acheron valley. Intensive coverage was extended to 11 hectares of the 33-hectare site, representing most of the accessible and walkable terrain. More than 85,000 artifacts were counted, including more than 15,000 pottery sherds and more than 70,000 tile and brick fragments, yielding an average figure in excess of 7,700 artifacts per hectare.

Reconnaissance of an extensive nature, i.e., not employing systematic, intensive field walking methods, was carried

out across the Nikopolis Project study area in order to reveal the overall characteristics of the region: the number of sites, and their distribution, chronology, function, and relationship to the environmental context (Cherry 1983: 393). This sort of investigation included scouting forays, and more systematic coverage of the landscape that nevertheless was not accomplished at close intervals. A separate designation, *walkover*, was applied to extensive reconnaissance in order to provide documentation of the areas covered and the results obtained. A walkover field form similar to the tract form allowed detailed information to be recorded in the standard Project format.

Ancillary field operations

The data generated in the discovery phase was supplemented by comprehensive follow-up studies of site/scatters, selected tracts, and other locations of interest. This second phase was normally initiated by “revisit” teams composed of archaeologists, geologists, and geomorphologists. The chief purposes of the revisit were to confirm or query vital information supplied by the discovery team (dimensions, chronological periods represented, spatial patterning, etc.), to describe the geomorphological setting, and if necessary, to make additional observations and collections. These teams also visited locations not designated as sites or scatters by the discovery team, but deemed worthy of reconsideration based on analysis of the density data and the artifact samples.

Based on the findings of the revisit teams, certain units were selected for further analysis involving resurvey or geophysical prospection. Resurvey of a small percentage of tracts was a planned activity that permitted us to measure the effects of changing conditions of discovery brought about by natural processes of erosion, deposition, and vegetation growth; and by human actions such as agriculture and land clearance (Ammerman 1981, 1985, 1993). Since conditions of access and surface visibility may exert a profound influence on the archaeological document that is produced for a given landscape, resurvey results served to qualify and inform inferences drawn from surface data.

Methods: Geological Coring

The second main source of data was a program of geological coring undertaken in the lower Acheron plain and elsewhere in the nomos (Besonen, Rapp, and Jing 2003). Twenty-eight cores were taken from 1992–1994 in the lower Acheron, using a hand-held auger. The cores ranged in length from 2.0–12.0 meters; the majority were retrieved by split spoon barrel, and the remainder by auger bit. All cores were described in terms of depth, thickness, color, texture/grain size, structure, consistence, presence/size/distinctness of mottles (reduction, sesquioxide, and organic), presence/size of CaCO₃ and MnO nodules, and the presence of floral, faunal, and cultural remains.

Fourteen of the cores were systematically sampled, yielding approximately 250 samples for laboratory analysis and radiocarbon dating. Analysis of microfauna determined the salinity of the environment, and thus helped to distinguish between marine and fresh-water deposits. One entire core was preserved for future palynological analysis.

Conclusion

The theoretical and methodological approaches to the archaeological study of the lower Acheron valley were designed to address a wide range of issues relating to the human ecology of the Bronze Age. In addition to the data that were collected by the Nikopolis Project using those methods, the information gathered in more than a century of archaeological research in Epirus was available to be utilized. In the next chapter, I trace the history of research on the Bronze Age in Epirus, evaluate the archaeological data as they currently exist, and explore ways in which these data may be profitably incorporated into the present study.

Endnotes

1. The annales school, and its exploitation by archaeologists, are immensely complex topics. A thorough theoretical discussion is well beyond the scope of this work; the discussion that follows merely outlines the relevant fundamentals. For a full consideration of annales and archaeology, see the edited volumes by Bintliff (1991b) and Knapp (1992b).
2. Other plausible focal locations for Mycenaean coastal activity, such as the mouth of the Kalamas (ancient Thyamis) River near Igoumenitsa, cannot be discounted since the coastline has never been searched systematically.

Chapter 3: Previous Research on the Bronze Age of Epirus: A Brief Summary

Historical Overview of Archaeological Research

Throughout its history, Epirus has often stood on the periphery of events taking place in Greece, and in archaeological research too the development was late. The northern provinces were the last to be extricated from the Ottoman Empire; whereas the traditional birth of the modern Greek state came in the 1820s, only in 1912 were the Ottomans expelled from Epirus. Under the “Turkokratia,” as the period of Ottoman domination is known, the impoverished peasantry had little time for the luxury of pursuing the Greek past, and their overlords had little interest. Until the early 19th century, only the occasional European traveler reconnoitered the Epirote landscape for antiquities. Among the earliest accounts are those of Cyriacus of Ancona, who in the years 1434–1436 and 1448 traveled by boat along the Ionian coast, and in the region of the Ambrakian Gulf (Bodnar 1960: 28–31, 42, 65; Hammond 1967: 709–712). During several visits to the court of the Neapolitan prince Carlo II at Arta, he made excursions to Nikopolis, Rogon, and even the lower course of the Acheron River, copying inscriptions, acquiring manuscripts, and sketching ancient works of art. He was less meticulous with topography and site identification, mistaking the locations of many famous sites of antiquity; among these was the Dodonaean sanctuary of Zeus, which Cyriacus believed he had viewed in the vicinity of Nikopolis.

Epirus was largely ignored by the European antiquarian movement of the 17th century, and by the Dilettanti of the middle to late 18th century. Attention was instead focused on the great monuments and objects of art still to be seen in the old Greek centers of southern Greece and Asia Minor. This situation was little changed by the earliest of the topographers at the end of the 18th century. Many of these men traversed the Greek landscape on foot, following faithfully in the footsteps of Pausanias, but Pausanias apparently never visited Epirus, and apart from several anecdotes concerning the oracle of Zeus at Dodona, had relatively little to say about it. Thus it was left to a British military liaison officer, Colonel William Leake, commissioned to produce a general geography of Greece in the early years of the 19th century, to bring to light the forgotten remains of Epirote antiquity.

Leake executed his task with tireless determination and meticulous attention to detail. In three years of field research between 1805 and 1810, he identified the locations and names of most of the undiscovered Greek sites, large and small, mentioned by Pausanias, Strabo, Livy, and others (Stoneman 1987: 155–160). His journal entries, augmented by two decades of library research, were published in the three-volume *Travels in the Morea* (1830), and in the four-volume *Travels in Northern Greece* (1835). Leake traveled extensively in Epirus, and his learned observations on

Epirote topography and ancient history, found primarily in volumes I and IV of *Travels in Northern Greece*, provided for the first time a solid foundation upon which later archaeologists could find firm footing.

Leake was followed not long after in Epirus by Christopher Wordsworth, who also adopted a topographical approach in the search for ancient Greece. The narrative of Wordsworth’s *Greece: Pictorial, Descriptive, and Historical* (1839; revised edition 1853) includes explicit topographical references and information on the condition of contemporary villages and their inhabitants. Wordsworth’s work was to play a fundamental role in the birth of Epirote archaeology. At the urging of another traveler, Sir William Gell, Wordsworth undertook to unravel the mystery of the location of Dodona, with its famous sanctuary and oracle of Zeus, which even Leake (1835 [IV]: 168–201) had despaired of finding. Although Leake incorrectly favored Kastritsa, on the southern shore of the Lake of Ioannina (Pamvotis), as the site of Dodona, he foreshadowed later developments by devoting considerable attention to some ruins in an upland plain at a place called Dramisos, some 11 miles southwest of Ioannina (Leake 1835 [I]: 264–268). On September 12, 1832, Wordsworth visited the ruins at Dramisos (Wordsworth 1881: 228–229). Upon comparing the topographic features of the place to those mentioned in ancient sources, and observing the remains of an acropolis, a “magnificent Theatre, one of the largest now existing in Greece,” and the remains of two temples, Wordsworth surmised correctly that this was indeed the site of ancient Dodona (Wordsworth 1853: 324–329).

The archaeological study of Epirus began in 1875 with excavations at the sanctuary of Zeus at Dodona by Constantinos Carapanos, a politician from Arta who received permission from the Ottoman authorities to excavate at Tsarkovistas, the site known to Leake and Wordsworth as Dramisos, after hearing of the discovery by local inhabitants of coins and other artifacts (Carapanos 1878). His discovery of oracular inscriptions on bronze and lead tablets confirmed the identity of the sanctuary. It was not until much later, however, that the first prehistoric stratum was uncovered in Epirus by archaeologist Dimitrios Evangelidis, who excavated at the sanctuary of Zeus at Dodona between 1929 and 1933 (Evangelidis 1935). Evangelidis’ publication was the first to illustrate the pottery, stone tools, and other objects used by the prehistoric, Bronze Age inhabitants of Epirus. The Second World War and the ensuing Greek Civil War prevented further developments until the 1950s, when Evangelides resumed work at Dodona, assisted now by Sotirios Dakaris. After the death of Evangelidis in 1959, Dakaris continued the excavations at Dodona, and in the years that followed became the doyen of Epirote archaeology.

Under Dakaris' energetic leadership, the scope of archaeological research in Epirus broadened dramatically. Important settlements and burials were excavated, and information on surface material and other chance finds was collected and catalogued. Dakaris himself published massive numbers of interim reports, syntheses, and popular accounts in an effort to bring to life the antiquity of his homeland for scholars and laymen alike. In all of this work, he took a particularly keen interest in the later prehistory of the province. He excavated most of the significant Bronze Age sites that are known today, including Dodona, Kastritsa, Kiperi, Xylokastro (Ephyra), and the Nekyomanteion, and wrote extensively on the social and mythological aspects of the Bronze Age peoples of Epirus. More recently, Dakaris' younger colleagues have carried on the investigation of Bronze Age sites. From 1976 to 1987, Thanasis Papadopoulos continued the excavations at the important site of Ephyra in the lower Acheron valley, and Ioulia Vokotopoulou excavated Bronze Age sites, as well as the slightly later, Iron Age to Hellenistic, settlement of Vitsa in the Zagorios mountains north of Ioannina, which she published in exemplary fashion (Vokotopoulou 1986).

A second great figure in the study of Epirote antiquities is the British historian Nicholas G. L. Hammond, whose exploration of Epirus began as a student in 1929–1930. In the course of the following decade, and particularly in 1938–1939, Hammond undertook a one-man survey on foot of both the Greek and Albanian portions of Epirus. In his own words, this project "...involved fourteen months in the country, walking from village to village, carrying photographic and surveying equipment, and living with the villagers" (Hammond 1967: vii). His search strategy was a combination of seeking information from local residents and striking out on his own, and in this way he documented known sites, discovered the surface remains of many sites previously unknown, and amassed a body of data that culminated in his monumental work *Epirus: The Geography, the Ancient Remains, the History and the Topography of Epirus and Adjacent Areas*, published in 1967. *Epirus* is the first comprehensive synthesis of Epirote antiquity, encompassing the natural environment, archaeological remains, mythological and genealogical traditions, and historical developments from Paleolithic times to the end of the Hellenistic period. A large section of the book, over 100 pages, is devoted specifically to a consideration of the Bronze Age remains and their connection with the literary traditions surrounding Epirus.

Other important syntheses had begun to appear by the time Hammond's work was published. These included two volumes by P. R. Franke, *Alt-Epirus und das Königtum der Molosser* (1955) and *Die antiken Münzen von Epirus* (1961), and E. Lepore's *Ricerche sull'antico Epiro* (1962). Lepore's work has particular relevance to the Epirote Bronze Age. In it, he assesses the role that contact with the Mycenaean world played in creating a tribal and ethnic identity in Epirus, and through an examination of the mythical, literary, linguistic, and archaeological evidence,

argues that the most ancient sources preserve garbled memories of such a process.

In the 1970s, Greek researchers began to synthesize the vast amount of information obtained from excavations carried out under the auspices of the Greek Archaeological Service and the Archaeological Society of Athens. Dakaris contributed two volumes to the *Ancient Greek Cities* series of the Athens Center for Ekistics. His *Cassopaia and the Elean Colonies* (AGC 4, 1971a) covers the antiquities in the southwestern region of Epirus corresponding to the territory controlled by the town of Kassope in the Hellenistic period; and his *Θεσπρωτία* (AGC 15, 1972a) records those in the region of Thesprotia to the north and northwest of Kassopaia. Both volumes contain detailed analyses of the archaeological evidence from Paleolithic to Roman times in the context of environmental conditions, literary testimony, and economic and social processes.

A complete catalogue of Bronze Age sites, along with analysis and interpretation, was first published by Papadopoulos in his article "Η Εποχή του Χαλκού στην Ηπειρο" (1976). Papadopoulos lists 65 sites, and provides a commentary organized by chronology and artifact type. A decade later, a doctoral dissertation by Kostas Soueref, *Μυκηναϊκές Μαρτυρίες από την Ηπειρο* (University of Thessaloniki, 1986), brought together all of the evidence for the Mycenaean presence in Epirus known at that time. In subsequent years, short interpretive studies have been published on various social and economic aspects of the Epirote Bronze Age, primarily by Papadopoulos (1987b) and Soueref (1989a, 1989b, 1994, 1996, 2002). New discoveries have been reported and described by Ilias and Ioanna Andreou (e.g., Io. Andreou 1987; Il. Andreou 1994; Andreou and Andreou 1999) and others. The archaeological study of Epirote prehistory has been considerably enhanced by the arrival in the later 1980s of two prehistorians, Angelika Douzougli and Konstantinos Zachos, as Ephor and chief archaeologist of the IB' Ephoreia of Prehistoric and Classical Antiquities, based in Ioannina. Their work at sites such as Krya and Doliana is discussed in detail below.

Epirus in Myth and Ancient Literature

The region corresponding to the modern province of Epirus played a prominent role in early Greek mythology and epic tradition, particularly in the epic cycle surrounding the Trojan War, and the stories of the voyage of the Argonauts. The place of Epirus in ancient Greek tradition is accorded full treatment by Hammond (1967: 365–395, 399–400), Lepore (1962: 1–107, 113–126), Dakaris (1964: 3–21, 1971a: 25–32, 1972a: 50–76), and others. My comments will thus be confined to a few summary points.

Epirus in the Epic Tradition

References to northwestern Greece appear from the beginning of Greek literature, in the Homeric *Iliad* and *Odyssey*, which were composed probably in the second half

of the 8th century B.C. and committed to writing a century or two later. In the *Iliad* (16. 233–236), Achilles prays to “Zeus of Dodona, Pelasgian,” whose dwelling is “far-off,” “wintry,” and “harsh.” There is no similar perception of Dodona as far removed from the Greek world in the *Odyssey*, however. Instead, the land of the Thesprotians lies quite close to Ithaka (*Od.* 17.525, 19.271), and there is much interaction between the two peoples. Odysseus had visited the mainland before, once in an effort to obtain poison in the territory of Ephyra (*Od.* 1.259, 2.328); and on his journey home, to consult the sacred oak at Dodona, in which Zeus dwelled, about the manner of his return to Ithaka (*Od.* 14.327, 19.296); and finally, near the mouth of the Acheron River, to consult an oracle of the dead (Nekyomanteion) in the realm of Hades and Persephone (*Od.* 10.485–11.631).

The Epirote region of Thesprotia also figured prominently in other epics belonging to the cycle of the returns and subsequent adventures of the Trojan War heroes. The *Telegony* of Eugammon of Cyrene, written in the middle of the 6th century B.C., gave an account of Odysseus’ adventures after his successful return to Ithaka; these included marriage and warfare in Thesprotia. Eugammon also produced the lost *Thesprotis*, which presumably contained much additional detail about the geography and mythology of the area. The *Thesprotis* was thought by ancient writers to have originated in a work by a probably mythical earlier poet named Mousaios.

Another early tradition is contained in the *Argonautica*, a tale of the voyage of the *Argo* from the Aegean to the Black Sea, and then to the Adriatic Sea and beyond, in which are embodied several mythological connections to Epirus. Only a late version composed by Apollonius of Rhodes in the mid-3rd century B.C. has survived, but the legend was well known to Homer, who referred to “the renowned *Argo*” (*Od.* 12.69–72). Medea was associated in later times with certain places in Epirus, including her alleged tomb at Buthrotum (Solinus 2.30) and a bridge in the lower Acheron valley near the Nekyomanteion (Ampelius 8.3). The keel of the *Argo* was said to have been taken from the sacred oak at Dodona (Ap. Rhod. 1.527, 4.583), but this appears to be a late addition by Apollonius (Hammond 1967: 366 n. 4, 368 n. 1). A multitude of mythological streams surrounding the *Argo* appeared in Classical and Hellenistic times, and the legend “...passed through many hands before it reached Apollonius” (Rieu 1981: 28). Although some elements that concern Epirus are likely contemporaneous with or even predate the Homeric stories (but are unlikely to date to Neolithic times, as maintained by Hammond [1967: 366]), the loss of the original version and the proliferation of alternative traditions make it difficult to point to Bronze Age survivals.

From this information we may assume that at least some portions of Epirus were well known in the Greek world by the 8th century B.C., and archaeological remains testify to a history of interregional exchanges on the Adriatic Sea

stretching back into the Bronze Age. But do the epic poems truly reflect Bronze Age cult practices at places like Dodona and the Nekyomanteion, as has been claimed (Hammond 1967: 369, 387; Dakaris 1971c: 16)? Some scholars take a strictly minimalist view of the preservation of genuine elements from Mycenaean times (e.g., Finley 1982; Morris 1986; Dickinson 1986), while most would allow for certain memories surviving, albeit in garbled form, the four or more centuries of oral transmission (Snodgrass 1971; see Sherratt 1990 for an assessment that measures literary elements against archaeological evidence). Among the more convincing cases for accurate memories of Bronze Age realities are certain elements of armament, such as the boar’s tusk helmet and the body shield attested by archaeological finds (Sherratt 1990: fig. 4), and the Catalogue of the Ships found in Book 2 of the *Iliad*, in which are recorded the names of several settlements that were occupied in the Late Bronze Age, but subsequently abandoned (in some cases, the settlements were reoccupied long after the Catalogue was composed). The linguistic survivals of demonstrably Mycenaean words in Homer are exceedingly rare, on the other hand, and other elements, such as the structural aspects of political and economic behavior, are certainly anachronisms. A reasonable position on this “Homeric question” would therefore allow for continuous reworking of the epic to incorporate social and material realities of the Iron Age, but with the preservation of a small but significant content of the oral tradition of the Late Bronze Age.

The issue of whether the Epirote sites portrayed as sacred places in early Greek literature can be ascribed such a function in the Bronze Age is best approached by considering the literary and archaeological evidence together.

The Case for a Bronze Age Oracle at Dodona

The testimonia of ancient Greek authors reflect a widespread belief in the impressive antiquity and authority of Zeus’ oracle at Dodona (Figure 1.2). According to Herodotus (2.52), Dodona was the oldest Greek oracle, and for a time the only one. Such a belief occasions little surprise, since the appearance of the oracle in Homeric verse placed it in the context of the Trojan War, a touchstone at the farthest reaches of the collective folk memory of the Greek people. Dodonaean Zeus is in fact called “Pelasgian” by Achilles (*Il.* 16.233). If we accept an 8th-century date for the composition of the *Iliad* and the *Odyssey*, a continuous tradition surrounding the oracle may be demonstrated, lasting over 11 centuries (with a few hiatuses, as when the sanctuary was destroyed by Aemilius Paullus in 167 B.C.) until the sanctuary was dismantled, probably in the reign of Theodosius the Great at the end of the 4th century A.D. References to Dodona are found in many sources, including Hesiod, Herodotus, Aeschylus, Sophocles, Demosthenes, Apollonius, and Pausanias.

In this long written tradition there are some elements that appear to indicate prehellenic worship at the sanctuary prior to the so-called Dorian invasion. Conspicuous among them are the many chthonic features and symbols associated with the oracular ritual, most importantly an apparent connection with a female deity, often cast as an Earth Mother/Goddess (e.g., the “Divine Mother” of the Pylos archives: Chadwick 1959: 126). The earth goddess took on many forms to personify various aspects of nature and fertility, and was an important divinity of the Minoans and Mycenaeans in the Bronze Age. Mystery cults, such as that of Demeter at Eleusis, are closely tied to fertility goddesses, and may be prehellenic in origin (Chadwick 1985: 193). Although Mycenaean religion seems to have featured the worship of female deities symbolizing the reproductive fertility of humans and the earth, a facile equation with Minoan fertility goddesses is not warranted. Hägg (1985) has argued that Late Bronze Age religion on the Greek mainland was essentially Helladic in character, incorporating Indo-European and “pre-Greek” elements (inherited from the Neolithic and Early Bronze Age populations), with a superficial Minoan veneer imposed in the form of cult objects, symbols, and iconography. The Linear B tablets from Knossos and Pylos reveal, however, that by the late 13th century B.C., the names of several of the Olympian gods, such as Poseidon, Zeus, and Hermes, were already known and existed alongside Potnia (a seemingly generic name), Eleuthia (Eileithyia), and other goddesses with earth/fertility connections in palace records (Chadwick 1985: 194). It is intriguing, therefore, that Pausanias (10.12.5) records the tradition that the priestesses at Dodona were the first singers and sang the following verses:

Zeus was, and is, and shall be, O great Zeus.
Earth raises crops. Cry to the Earth-Mother.

transl. Peter Levi

This is, on the face of it, a clear instance of syncretism in which the cult of a sky-god is superimposed on the preexisting worship of vegetation and nature, a process which, given the evidence of the Linear B tablets, may have taken place throughout the Greek world in the Late Bronze Age. There is another interesting parallel between the Linear B tablets and the worship at Dodona. There appears in both the Knossos and Pylos archives a goddess Diwia, whose name is evidently a feminine form of Zeus (Dieus), but she is supplanted by Hera (who is already coupled with Zeus in the Pylian archives) and does not survive beyond the Mycenaean period (Vermeule 1964: 292–293). At Dodona, it was never Hera who became Zeus’ consort, but rather Dione, again a feminine form of Zeus (Dios) in the later Greek language. Dione is named in the *Iliad* (5.370, 381) as the mother of Aphrodite, a fertility goddess.

Other ritual associations raise the possibility of an original chthonic cult. In the *Iliad*, Achilles reveals that the god’s interpreters (the Selloi) have unwashed feet, and sleep directly on the ground (16.234). In the story told to Herodotus, a dove was said to have founded the sanctuary

of Zeus, and this symbol was preserved in representations of the sanctuary (e.g., a bronze coin of Dodona ca. 300 B.C.; Dakaris 1971c: pl. 38.3) and in the name for the priestesses, *peleies*. Representations of doves are common in Minoan and Mycenaean cult contexts, attached to goddesses and worshipers (e.g., in Late Minoan contexts, Kofou 1989: figs. 53, 108; in the Shrine of the Double Axes at Knossos, Tylour 1964: 65–67, fig. 18; in the Orpheus fresco at Pylos, Tylour 1964: pl. 38). The veneration of the oak itself (*Od.* 14.327, 19.296; Hesiod, fragments 240, 319; Herodotus 2.54) recalls the prevalence of a tree cult in Minoan and Mycenaean religion (Tylour 1964: 60–73, pls. 8, 10), but oak worship is also characteristic of early cults elsewhere in Europe (Dakaris 1971c: 16). Springs, echoes, and the rustling of leaves in the wind are also described as elements of the early prophetic ritual at Dodona (Hammond 1967: 369); all indicate the worship of nature, which has been deduced as an integral feature of Bronze Age cult in the Aegean (e.g., Tylour 1964: 60–74).

The seemingly strong indications of Bronze Age oracular activity at Dodona that survived in Greek literature are not supported by archaeological finds from the sanctuary. Nearly 20 seasons of excavation have yielded no reliable evidence of cult activity at Dodona in the Bronze Age. The discrepancy between the two sources of information is placed in clearer focus by several points arising from the archaeological data.

There is first the question of prehistoric votive objects. The chief artifacts from the Bronze Age are stone celts, flaked stone tools, and coarse pottery of local manufacture (Dakaris 1971c: 14–16, pls. 18.1, 18.2, 20.1); there are also, in small quantity, bronze knives, swords, daggers, spear points, and double axes, and close to 200 sherds from imported Mycenaean ceramic vessels (Dakaris 1971c: 17, pls. 19, 20.2, 20.3; Wardle 1972: 197–199). The double axes have been taken as votive offerings (Hammond 1967: 369; Dakaris 1971c: 84), by analogy with the obvious cult function they sometimes held in the Minoan and Mycenaean worlds, where they were also depicted in vase painting, frescoes, seals, and gem stones, and reproduced in miniature.¹ Yet there is no reason to imagine anything other than a utilitarian function for the double axes found at Dodona. In all, five double axes have been recovered from the sanctuary area, but several dozen are known from other sites throughout Epirus that no one would identify as cult centers (Soueref 1986: table VIII; Andreou 1994). The vast majority of double axes, especially in northern Greece and Europe, must be seen as utilitarian objects (Harding 1984: 127–129). Bronze weapons are known as burial offerings in Epirus, but not as yet associated with any other kind of ritual. The disturbed contexts at Dodona preclude an understanding of how they were used and where they were ultimately deposited.

The architectural and artifactual evidence suggests that Dodona was a normal settlement rather than a sanctuary.

PREVIOUS RESEARCH ON THE BRONZE AGE OF EPIRUS

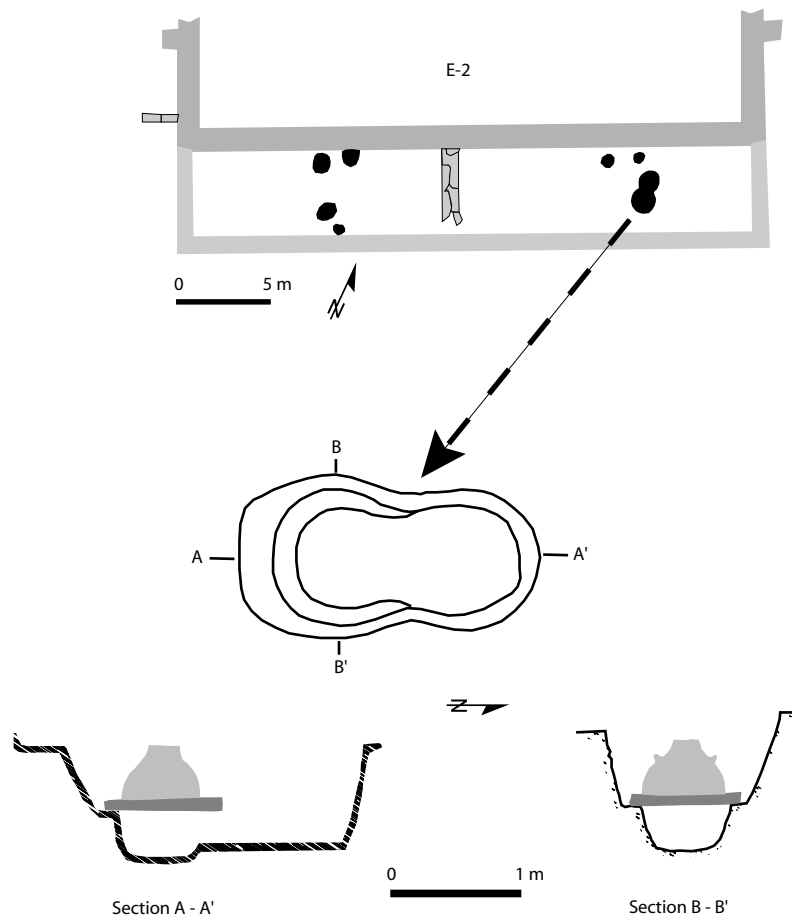


Figure 3.1 Plans and sections of prehistoric features beneath the Bouleuterion, Dodona. After Dakaris 1967a.



Figure 3.2 Plan of the Nekyomanteion near the mouth of the Acheron River. After Dakaris 1975c.

Over the years, a thin prehistoric stratum has been traced over much of the area of the sanctuary. In 1967, Dakaris uncovered prehistoric architectural remains consisting of traces of wooden huts, stone-lined postholes, bothroi, and hearths in apparent association with imitation and imported Mycenaean, matt-painted, and local coarse pottery (Figure 3.1; Dakaris 1967a: 39–43). The corpus of ceramic material from Dakaris' excavations of the late 1960s was analyzed by Kenneth Wardle (1972: 194–216), who concluded that the shapes represented by the sherds of Mycenaean type are normal for a settlement context. He estimated that Mycenaean ware makes up only around five percent of the total ceramic assemblage, a figure that emphasizes the indigenous character of the settlement. The architectural remains indicate nothing more than a small, rural habitation site.

Even the presence of Mycenaean goods, particularly in these small quantities, does not prove that Dodona was commonly known in the Mycenaean world. Direct contact with inhabitants of southern and central Greece may have been restricted to coastal interactions with merchants, pirates, and a very small number of settlers on the Adriatic coast near Parga, for example, and at the mouth of the Acheron River. Imported goods may have arrived at Dodona, situated well inland in an isolated upland plain, indirectly through as yet uncertain exchange mechanisms. If this is the case, the long seafaring tradition that can be demonstrated for the Adriatic Sea in the Bronze Age may not be directly relevant to Dodona at all.

It could be the case, of course, that excavations have simply not located the actual site of Bronze Age cult activity, or that later building programs obliterated the remains of the prehistoric sanctuary, or even that the nature of the early worship left no traces in the archaeological record. The evidence of disturbance in prehistoric deposits is pervasive; prehistoric artifacts are mixed with those of historical date, often in the fill of historical structures. The fact remains, nevertheless, that archaeologists have failed thus far to unearth any strong corroboration of the literary tradition. Some of the ceramic material studied by Wardle belongs to the Early Iron Age (e.g., certain orange-red fabrics), but there is little additional information concerning occupation of any kind at Dodona from the 12th to the 9th century B.C.

The literary and archaeological data appear to come together in the later 8th century B.C., when bronze tripods, warrior figurines, ornaments, and weapons have a possibly votive character (Dakaris 1971c: 19, pls. 21–24), and can be roughly dated by comparison with similar objects at other sanctuaries (Hammond 1967: 407 and n. 5). The continuity of these offerings through subsequent centuries, during which the operation of the oracle is incontestable, suggests that by the late 8th century, the oracle was known and patronized by southern Greeks. The distinction of Dodonaean Zeus in the *Iliad* and the *Odyssey*, according to tradition composed around 730 B.C., implies that the

oracle had been in place for at least a few generations, unless it can be shown that the references to Dodona and oracular activity in general are later interpolations. Thus a foundation after 800 B.C. is required by both archaeological and literary evidence, and the actual date could be considerably later. If the oracle was founded some time in the late 8th or 7th century, it would be possible to embrace a continuous literary tradition beginning with the written Homeric epics, rather than propose a Bronze Age tradition that then suffered a hiatus of four centuries. With further study, it may be possible to associate the foundation of the sanctuary at Dodona with the creation of rural sanctuaries in the 8th century B.C. as part of the social upheavals leading to the emergence of the polis (Morris 1987; but cf. Sourvinou-Inwood 1993).

All things considered, the case for a Bronze Age oracle of Zeus at Dodona is equivocal. The literary testimonia contain provocative strands of tradition that are difficult to dismiss despite their late date, and one day dramatic confirmation of the early date may come from archaeology or some other field. For the present, we may conclude that Zeus' oracle was well known to the Greeks of the late Dark Ages, if not earlier.

The Oracle of the Dead (Nekyomanteion)

Before he was able to return home to Ithaka, Odysseus was compelled to inquire of the soul of the seer Teiresias in the house of Hades how his return might be accomplished. The sorceress Kirke described the setting so that Odysseus and his men would know the exact spot:

There into Acheron the river of pain two
streams flow, Pyriphlegethon blazing with fire,
and Cocytos re-sounding with lamentation,
which is a branch of the hateful water of Styx:
a rock is there, by which the two roaring
streams unite.

Odyssey 10.510–513, transl. W. H. D. Rouse

The striking similarity of this description to the topography and toponymy of the region of the Acheron mouth (Figure 1.3) impressed ancient authors (Pausanias 1.17.5) and modern observers alike. Until about 50 years ago, two streams did in fact flow directly into the Acheron River (one of these was dried up when the Acherousian Lake was drained); at the confluence, there is a conspicuous rocky hill rising above the flat plain. It is natural, therefore, that modern archaeological prospection for the oracle has centered on the rocky eminence, known locally as Ayios Ioannis after the 18th-century monastic church on its crest.

Excavations begun in 1958 immediately revealed a complex, massively fortified enclosure of Hellenistic date (Figure 3.2; Dakaris 1958a, 1960b, 1963b, 1963c, 1967c), built directly above a central chasm in the rock measuring approximately 15 m × 4.25 m (Dakaris 1960b: 117). The fortification walls, constructed in excellent polygonal

PREVIOUS RESEARCH ON THE BRONZE AGE OF EPIRUS

masonry, reach a thickness of 3.3 m in the interior enclosure above the chasm. The entire complex was taken by Dakaris to be the labyrinthine temenos of the Hellenistic Nekyomanteion, and he developed an elaborate story to explain the architectural plan of the sanctuary, as well as the archaeological finds from excavations within it (Dakaris 1975c).

Many observers have found Dakaris' interpretation to be less than convincing. Close visual inspection of the extant architectural and artifactual remains suggests that this enclosure was probably the site of a small fortified garrison or settlement, similar to several others in the lower Acheron valley that also date to the Hellenistic period. First, the strength and layout of the walls betray a primary concern for defense. The powerfully built, thick outer walls are less impressive than the even more massive interior ones protecting the central stronghold, in which food and liquids were stored in large pithoi. The twisting passageways leading to the central stronghold, which were thought by Dakaris to have confused the supplicant stumbling through the dark toward the realm of Hades, look more like a defensive tactic designed to prevent enemies from amassing to assault the complex's core, and perhaps also to make them vulnerable to attack on their unshielded sides. Second, the bronze pulleys and blocks and iron wheels that Dakaris took to be mechanisms to raise and lower the god in ritual performances in the central chasm (Dakaris 1975c: 15, pl. 13) have been shown to be pieces of Hellenistic catapults (Baatz 1979, 1982; Fleury 1993: 274). Third, the food processing and food storage equipment that still lies scattered about the site points not to the processing of food for ritual purposes, but rather to the storage of agricultural surplus to sustain a small garrison concerned with withstanding a siege.

It is important to point out that recasting the Nekyomanteion site as a small fortified settlement or garrison demonstrates that the Hellenistic structure did not have as its primary function the maintenance of the oracle, but does not preclude the possibility that the oracle did operate on Ayios Ioannis hill or somewhere nearby. The Nekyomanteion appears on the historical scene as early as the late 7th century B.C. Herodotus (5.92) relates the story that Periander, the tyrant of Corinth, had misplaced something and sent representatives to the Nekyomanteion, operating "among the Thesproti on the river Acheron," to ask the ghost of his wife Melissa where to find it. The original oracle may indeed have centered on the chasm: within the walls of the site, several ceramic busts of Demeter, probably votive offerings of the 7th to the 5th century B.C., were found (Dakaris 1975c: 16–17). A similar cache with the same chronological range was found in Mesopotamos village south of Ayios Ioannis hill (Dakaris 1975c: 18–19).

The evidence for Bronze Age activity on and around Ayios Ioannis hill is moderate; the signs of Bronze Age cult are to date nonexistent. During the 1963 excavation season,

sherds from local Bronze Age handmade wares were found along with a few from Mycenaean vessels in a "prehistoric" fill below the Hellenistic strata within the fortification (Dakaris 1967c: 32; 1972a: 63). Near the central stronghold, a cist grave was found in 1963, and two more nearly adjacent to the first were discovered in 1976 and 1977 (Dakaris 1963b, 1963c, 1967c, 1976b, 1977b). Only in the first cist grave were any contents preserved; these comprised a single human skeleton, a few sherds from local and Mycenaean vessels, five chalcedony beads, and bones from pigs, wild boar, and cattle. In Mesopotamos village, approximately 100 m south of the Nekyomanteion site, the chance discovery of a T-shaped dagger of Late Helladic type (Sandars Type F, variant F2B: Kilian-Dirlmeier 1993: 84, pl. 31.197) was made in 1963 (Dakaris 1967c: 32, 1972a: 63).

The existence of Bronze Age activity at Ayios Ioannis is to be expected, because the site shares a long, prominent ridge with the walled Bronze Age settlement of Ephyra, just a few hundred meters to the north. Yet the scarcity of information from Ayios Ioannis does not allow an informed interpretation of its function, or of its relationship to the settlement at Ephyra. There is no reason to believe that an oracular sanctuary operated there in prehistoric times simply because Odysseus consulted the dead in Book XI of the *Odyssey*. We need not assume that local communities in Epirus reenacted the episode at a very early moment; the foundation of the oracle may have been a response to the version of the *Odyssey* that was composed in Late Geometric times, or even to the later written version. The archaeological and literary evidence point to a Late Geometric or Archaic foundation, and the existence of a Bronze Age oracle at Ayios Ioannis is thus far not supported by any evidence.

The State of Bronze Age Archaeology in the 1990s

When the Nikopolis Project took to the field in 1991, approximately 100 find spots of Bronze Age material were known in the Greek province of Epirus (Figure 3.3; see the Appendix for bibliography by site). Table 3.1 presents a roster of the find spots, and a breakdown of the categories of material recovered at each (Papadopoulos 1976, 1987c; Soueref 1986; Andreou 1987; Preka-Alexandri 1987; Andreou 1994). Sites reported after 1995 are added to Figure 3.3 and Table 3.1, and publication information, if available, is added to the Appendix.² Counted among the 104 sites reported here were (approximately) 31 with one or more human burials, 37 at which bronze weapons or implements were found, 65 with local pottery, and 13 with imported or imitation Mycenaean sherds. Faunal remains were reported at only four sites, although many sites had actually produced them. Although modest for a region the size of Epirus, these numbers actually obscure the truly profound lacunae in our basic knowledge. Close examination of the data presented in Table 3.1 exposes the assumptions underlying the dating and interpretation of sites, revealing that the numerous uncertainties in our

PREVIOUS RESEARCH ON THE BRONZE AGE OF EPIRUS

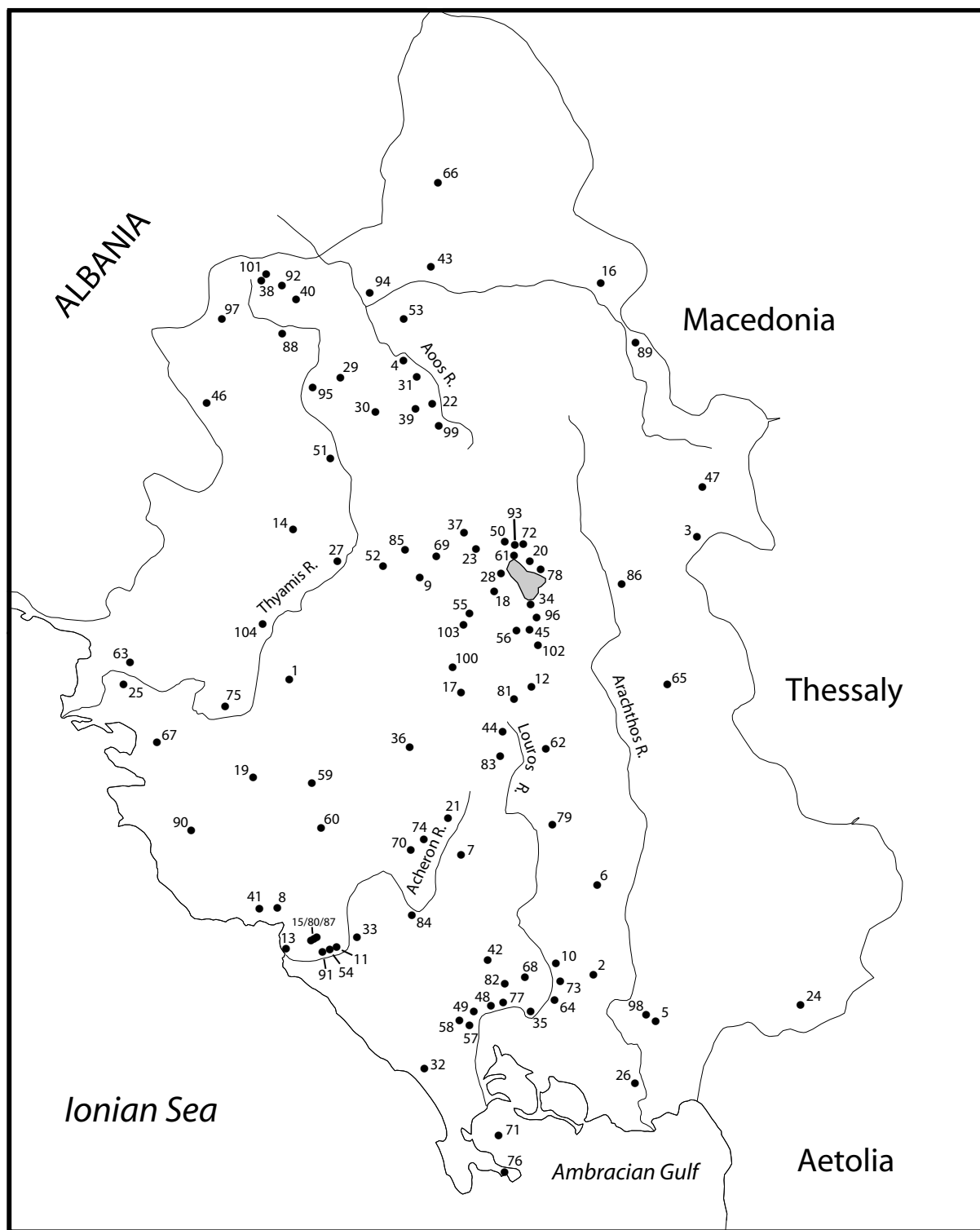


Figure 3.3 Map showing the locations of Bronze Age sites in Epirus known in the early 1990s.

Key to Site Names for Figure 3.3

1 Aetos	53 Mesogephyra
2 Ammotopos	54 Mesopotamos village
3 Anthochori	55 Neochoropoulo
4 Aristi	56 Neokaisareia
5 Artá	57 Oropos
6 Asprochaliko	58 Palaiorophoros
7 Avlotopos	59 Paramythia-Tsardakia
8 Ayia Kyriaki	60 Pediada Kokytou
9 Ayioi Anargyroi	61 Perama
10 Ayios Georgios (vicinity)	62 Pesta Sklivanis
11 Ayios Ioannis (Nekyomanteion)	63 Philiates
12 Bizani	64 Philippiada
13 Cheimerio-Kouteti	65 Pramanta
14 Despotiko	66 Pyrgos Ragiou
15 Dikorpho	67 Riziani
16 Distrato	68 Rizovouni
17 Dodona	69 Rodotopi
18 Dourouti (University of Ioannina)	70 Romano
19 Dragani	71 Salaora
20 Dravatova	72 Sentenikos
21 Elaphos	73 Siroupolis
22 Elaphotopos	74 Sistrounio
23 Gardiki	75 Skala
24 Gianniotio	76 Skaphidaki
25 Goumani	77 Stephani
26 Graikiko	78 Strounio
27 Gribiani	79 Terovo
28 Ioannina Museum site	80 Themelo
29 Kakousioi	81 Theriakisio
30 Kalpaki	82 Thesprotiko
31 Kalyvia	83 Toskesi-Achladea
32 Kassope	84 Trikastros
33 Kastri	85 Tsergiani
34 Kastritsa	86 Vaxia
35 Kastro Rogon	87 Vigla (Themelo)
36 Katamachi	88 Vissani
37 Kato Lapsista	89 Vouvousa
38 Kato Meropi	90 Vrachanas
39 Kato Pedina	91 Xylokastro (Ephyra)
40 Kephalovryso	92 Zeravina
41 Kiperi	93 Krya
42 Kokkinopilos	94 Liatovouni
43 Konitsa	95 Doliana
44 Kopani	96 Plaision Kakolangado
45 Koutselio	97 Stavrodromi
46 Ktismata	98 Maratovouni
47 Lachanokastro	99 Kato Soudenoi Zagoriou
48 Lelovo	100 Gouves
49 Louros River (vicinity)	101 Palaipyrgos
50 Lykotrichi	102 Rachi Platanias
51 Mazaraki	103 Ayioi Apostoloi Pedinis
52 Megali Goritsa	104 Vereniki

PREVIOUS RESEARCH ON THE BRONZE AGE OF EPIRUS

Table 3.1 Elements of material culture at Epirote Bronze Age sites.

<i>Site name</i>	<i>Elements*</i>						
	<i>AR</i>	<i>LP</i>	<i>MP</i>	<i>BR</i>	<i>L</i>	<i>F</i>	<i>B</i>
Aetos		●			●		
Ammotopos		●					
Anthochori				●	●		●
Aristi	●	●	●				●
Arta				●	●		
Asprochaliko					●		
Avlotopos		●					
Ayia Kyriaki				●			
Ayioi Anargyroi	●	●					●
Ayioi Apostoloi Pedinis		●		●			●
Ayios Georgios (vicinity)					●		
Ayios Ioannis (Nekyomanteion)		●	●	●	●	●	●
Bizani				?			
Cheimerio: Kouteti	?						
Despotiko					●		
Dikorpho		●	●		●		
Distrato		●					
Dodona	●	●	●	●	●		
Doliana	●	●					
Dourouti (Univ. of Ioannina)		●					
Dragani					●		?
Dravatova		●					
Elaphos					●		
Elaphotopos		●		●			●
Gardiki		●		●			
Gianniotio		●		●			●
Goumani		●			●		
Gouves		●				●	
Graikiko					●		
Gribiani				●			●
Ioannina museum site				●			
Kakousioi				●			
Kalpaki		●		●			●
Kalyvia				●			
Kassope		●	●		?		
Kastri		●			●		
Kastritsa		●	●	●		●	●
Kastro Rogon							
Katamachi				●	●		
Kato Lapsista		●					
Kato Meropi		●					●
Kato Pedina		●			●		●
Kato Soudenoi Zagoriou		●					
Kephalovryso	●	●					●
Kiperi	?	●	●	●			●
Kokkinopilos		●			●		
Konitsa	●	●		●	●		●
Kopani		●	●				●
Koutselio		●					
Krya		●	●	●			
Ktismata		●					●
Lachanokastro				●			
Liatovouni	●	●	●	●			●
Lelovo					●		
Louros village (vicinity)					●		

PREVIOUS RESEARCH ON THE BRONZE AGE OF EPIRUS

Table 3.1 (cont.) Elements of material culture at Epirote Bronze Age sites.

<i>Site name</i>	<i>Elements*</i>						
	<i>AR</i>	<i>LP</i>	<i>MP</i>	<i>BR</i>	<i>L</i>	<i>F</i>	<i>B</i>
Lykotrichi		●					
Maratovouni		●					
Mazaraki	●	●	●	●			●
Megali Goritsa		●			●		
Mesogephyra				●			●
Mesopotamos				●			
Neochoropoulo		●	●				●
Neokaisareia	●	●					
Oropos	●				●		●
Palaiopyrgos		●					●
Palaiorophoro		●			●		
Paramythia: Tsardakia				●			●
Pediada Kokytou					●		
Perama		●		●			
Pesta Sklivanis				?			
Philiates		●					
Philippiada	●						
Plasion (Kakolangado)		?					
Pramanta				●			
Pyrgos Ragiou		●					
Rachi Platania		●					
Riziani		●		●			
Rizovouni		●					
Rodotopi		●			●		
Romano		●					●
Salaora					●		
Sentenikos		●					
Siroupolis				●			
Sistrounio		●					
Skala		●					
Skaphidaki		●		●			●
Stavrodromi Pogoniou		?					
Stephani				●			
Strounio				●			
Terovo		●		●			
Themelo		●					
Theriakisio	●	●					●
Thesprotiko	●	●			●		●
Toskesi (Achladea)					●		
Trikastro		●					
Tsergiani				●			
Vaxia		●		●			
Vereniki				●			
Vigla (Themelo)	●	●					
Vissani		●					●
Vovousa	●						
Vrachanas		●					
Xylokastro (Ephyra)	●	●	●	●	●	●	●
Zeravina							●
104 sites	16	65	13	37	29	4	31

*Key: AR = architectural remains; LP = local pottery comprising categories II , III, and IV, and Orange/red ware; MP = imported and imitation Mycenaean pottery; BR = bronze weapons and implements; L = lithics, including flaked and ground stone; F = faunal remains; B = human burial.

PREVIOUS RESEARCH ON THE BRONZE AGE OF EPIRUS

understanding of the Epirote Bronze Age are the result of several fundamental, yet still unresolved questions. For the sake of convenience, these issues may be explored under four basic headings: site discovery and documentation, stratigraphy, chronology, and publication and interpretation of results.

Site discovery and documentation

The belated emergence of Bronze Age research in Epirus ensured that progress would lag behind that of other nomoi, a problem exacerbated by Epirus' peripheral location in Greece. Toiling far from the political center of Athens, Epirote archaeologists have endured poor funding and staffing in a province that figured only marginally in much of ancient Greek literature, and which lacks the current political interest of a nomos like Macedonia. One result of this situation has been the lack of a systematic site survey of Epirus. Reconnaissance for sites of all periods has been limited to extensive, unsystematic forays by single individuals (Hammond 1967; Dakaris 1971a, 1972a) or small groups (Dakaris, Higgs, and Hey 1964; Higgs and Vita-Finzi 1966; Higgs, Dakaris, and Hey 1967), and in fact many of the sites were discovered by local residents during construction and other activities, and reported to the archaeological authorities. Although these combined efforts played a fundamental role in the location and recording of sites, particularly the more easily recognized ones, the methods employed did not permit reliable estimations of the number, type, and chronology of findspots that might be expected to occur across the landscape. The modern concepts and practices of systematic site survey that are designed to address such issues arrived in Epirus only with the inception of the Nikopolis Project.

The process of site discovery has been complicated by the natural Epirote environment. The terrain of most of the province is mountainous and rugged, and therefore difficult to explore. The steep contours promote widespread, intensive erosion and redeposition that disturb and remove as well as conceal evidence of human activity. It is not unusual to encounter entire large areas from which the ancient soils, and therefore sites in their primary contexts of deposition, have been entirely stripped (making the careful examination of the context of surface sites particularly essential).

The opportunities to review older discoveries are diminishing. Surface sites, especially those reported by local residents, often lack precise locational information, and several may no longer be recoverable as much for this reason as on account of subsequent land development or natural landscape changes. Over the years, too, artifacts from a number of sites have been lost or misplaced (Soueref 1986: 21–70), making confirmation of such information as has been recorded impossible. An ongoing reorganization of the material stored in the archaeological museum in Ioannina may result in the rediscovery of some of the missing items.

Stratigraphy

Although relatively few Bronze Age settlements have been identified, even fewer have been excavated thoroughly. The dearth of excavation has resulted on the one hand from insufficient funding and reconnaissance, and on the other hand from a lack of Bronze Age deposits suitable for stratigraphic excavation. There are at least two complications: 1) virtually all Bronze Age strata have been seriously disturbed by erosion or later occupation; and 2) multi-component sites, and even occupation for more than a century or two, appear to be rare, although the absence of chronological markers makes it difficult to judge the duration of a given occupation. Even in the more extensive settlement contexts, as at Dodona and Xylokaastro (Ephyra), the Bronze Age deposits have been found to be thin and widely disturbed by erosion, later construction, and other agents. Nowhere in Epirus has a continuous Bronze Age stratigraphic sequence with internal chronological phasing been found.

The identification and study of promising deposits are hampered by the inability of the Archaeological Service to allocate time and resources to long-term research excavations. Much of the Ephoreia's effort must be directed to the protection and rescue of endangered sites of all periods, most of which are investigated only briefly. It is an unfortunate paradox that as the expertise and interest of local archaeologists in problem-oriented research increase, the opportunities to practice it shrink, and it is noteworthy that important research is somehow being accomplished. Collaborative projects with teams from Greek and foreign universities may well take on growing importance in the future as a way to maximize the possibilities for intensive fieldwork and thorough analysis (for a discussion of the challenges faced by Greek and foreign archaeologists, see Kardulias 1994c; Cherry 2003).

Chronology

This state of affairs has obvious consequences for detecting cultural change over the course of the Bronze Age. Lacking continuous stratigraphy, archaeologists have been forced to construct chronological frameworks on the basis of the artifacts themselves, an approach that is often unsuccessful because the ceramic and lithic artifacts of local manufacture exhibit relatively little variation and thus do not lend themselves to close dating by purely stylistic criteria. Local traditions in pottery manufacture are assumed to have been tenaciously conservative, although because the chronological duration of the local pottery is not known, it is difficult to measure this "conservatism." The widespread occurrence of flaked and ground stone artifacts and debris across the Epirote landscape has likewise yielded little chronological information. Although preserved in astonishing quantities, flaked stone artifacts do not correspond closely to well studied, chronologically specific types from Greece and surrounding countries, with the result that their value as chronological markers will not be realized without the kind of careful analysis that has yet to

PREVIOUS RESEARCH ON THE BRONZE AGE OF EPIRUS

be performed. Only in the Late Bronze Age, when roughly datable objects of Mycenaean manufacture or inspiration, and others betraying northern inspiration or influence, arrived in Epirus, are there reliable chronological markers. The entire sweep of time prior to the Late Bronze Age, the one and one-half millennia traditionally accorded to the Early and Middle Bronze Ages (approximately 3000–1680 B.C. in Helladic chronology), lacks readily identifiable imports and thus remains completely undefined. In due course, I shall consider whether the lack of evidence for the earlier phases of the Bronze Age reflects insufficient investigation, poor chronological precision, a state of depopulation, or some other phenomenon.

The dating dilemma is typified by the fluid chronology of the local handmade, coarse pottery, the single most commonly found item on most late prehistoric sites. This coarse ware comprises categories II and III (henceforth K II and K III) in Dakaris' typology of prehistoric pottery discovered at Kastritsa (Dakaris 1951, 1952; Hammond 1967: 292; see Chapter 5). K II vessels are coarse to very coarse, generally thick and heavy, and were likely used primarily for storage, transport, and cooking. Most are undecorated, although plastic elaboration of the exterior surface in the form of lumps and impressed bands is not uncommon. On the basis of comparison with prehistoric pottery from neighboring districts, K II is thought to have appeared in Epirus at the beginning of the Bronze Age (Evangelidis 1935: 210; Dakaris 1952: 369). A smaller percentage of the ceramic corpus is made up of K III ware. K III differs from K II in certain important respects: the fabric is finer, firing is more complete, and the vessel surface is normally black, and often smoothed or burnished. K III is characterized by smaller vessels and shapes that suggest use as table ware. A general similarity in shapes and surface treatment to Minyan ware persuaded Dakaris to herald K III as the product of the first "Greeks" to emigrate to Epirus from the south in the EH III–MH periods (Dakaris 1952: 372).

The initial chronological assessment of K II and K III is reflected in the dating of Bronze Age sites. It was noted that whereas K II sherds are often found alone, those of K III are never found without K II. Accordingly, the sites at which K II sherds were found in the absence of other datable materials were given an Early Bronze Age date (Dakaris 1952: 384, 1972a: 52 and n. 152; Papadopoulos 1976: 272), and the presence of K III ware contributed to an attribution to the Middle Bronze Age, although certain bronze artifacts were also thought to belong to the Middle Bronze Age (Dakaris 1951: 178–180, 1952: 369–373; Papadopoulos 1976: 272–273).

This ceramic chronology began to unravel with the work of Kenneth Wardle (1972: 194, 208–209; 1977: 181–187), who made an intensive study of the prehistoric sherds from Dodona and many other sites in northwestern Greece. His analysis of the coarse ware from Dodona demonstrated convincingly that K II and K III should not be considered

separate fabrics, in either a cultural or chronological sense, but rather that K III represents, in terms of clay preparation, surface treatment, and firing, the finer end of a culturally homogeneous, handmade ceramic spectrum. Whereas Wardle was able to show many aspects of similarity in the two categories, his most persuasive argument rested in the many sherds and vessels that exhibit characteristics of both, and thus must be considered "intermediate" examples of canonical K II and K III types, which can now be seen as two ends of the same spectrum. I was able to confirm this pattern by inspection of the prehistoric ceramic assemblage from Xylokastro (Ephyra), and subsequently in the collections of ceramics from the Nikopolis Project survey. The actual duration of the coarse prehistoric pottery is a topic to which I shall turn in Chapter 5; suffice it to say here that Early and Middle Bronze Age dates assigned on the basis of pottery (e.g., Papadopoulos 1976: 336–338) have no real foundation on either stratigraphic or stylistic grounds.

The dating of sites on the basis of lithics is even more problematic. Stone tools were reported from 29 sites (Table 3.1), and are the only artifacts known at 11 of those. Only a few types have been dated explicitly by analogy to typologies developed elsewhere in Greece, and these efforts have produced little agreement. The shaft-hole axes discovered at Dodona, for example, are associated by Hammond (1967: 314–317) with Thessalian types Γ and E, and assigned dates beginning in the Shaft Grave era, while Dakaris (1971c: 14, pl. 20.1) prefers an Early Bronze Age date, and Papadopoulos (1976: 293) maintains that they cannot be more precisely dated than generally to the Bronze Age. For other classes, such as stone projectile points, no specific grounds for placing them in the Bronze Age are mentioned, and in fact so little information is available about them that it is impossible to pass judgment on comparisons with other regions. Flaked stone artifacts such as sickle elements, scrapers, etc., are not described at all in spite of their existence at some, perhaps many, sites. At a minimum, therefore, the 11 sites dated to the Bronze Age solely on the strength of their stone artifacts should be reexamined, as should several others at which lithics accompany other types of artifacts that are not securely dated.

The principal result of this chronological uncertainty is that the assignment of any artifact, feature, or site to a phase prior to the Late Bronze Age must be treated with skepticism. There is no reason to doubt that some of the local handmade pottery and some of the stone implements were fashioned in the earlier phases, but no incontrovertible proof for such chronological priority has yet been found, and no criteria are available to distinguish earlier from later specimens.

Interpretation of results

To the shortcomings outlined above may be added the lack of full and final publication of excavated sites. None of

PREVIOUS RESEARCH ON THE BRONZE AGE OF EPIRUS

the excavated Bronze Age settlements has received full publication, with the detailed contextual information, artifact analysis, and specialist studies that are so necessary for scholarly progress. The definitive publication of known settlements must be as high a priority as the discovery of new ones, for at present the absence of published data and analyses constitutes a breakdown of the vital link between empirical data and interpretation.

A recurring and frustrating obstacle to a more accurate assessment of all aspects of the Epirote Bronze Age is the fact that evidence is rarely presented in such a way that finds can be evaluated by the scholarly community. The terse descriptions of sites and results of investigations that appear in the yearly archaeological reports or in published conference papers simply do not permit effective review. To cite just one example, a recent conference paper (Andreou 1994) reported the discovery of almost 40 prehistoric sites in Epirus over a period of several decades. It was claimed that among these (mostly surface) findspots, the following elements of Neolithic to Early Iron Age material culture were discovered: prehistoric architectural foundations (at nine sites), local pottery (19 sites), Mycenaean pottery (3 sites), bronze objects (2 sites), stone tools (7 sites), and burial cists and/or tumuli (9 sites). No information was furnished regarding the criteria by which the identification and dating of the finds were made, and several of the attributions must arouse curiosity if not skepticism. One must wonder how stone wall foundations discerned on the surface were judged to be prehistoric: on the basis of their shape, masonry style, associated pottery, or perhaps something else? Surface remains of stone foundations are very difficult to date by reference to their morphological characteristics, and the association of pottery with such features on the surface is often fortuitous. A similar objection could be raised to dating the surface remains of cist graves, if there are no furnishings preserved within them (for most, none are mentioned). Cist graves of identical form and construction to those of the Bronze Age are known in the historical periods through Byzantine times, and thus more secure criteria are needed than form or construction. Whereas local Bronze Age pottery is reported at most of the findspots that produced architecture or burials, it must be asked whether pottery and other artifacts of historical times were also recovered at these locations. Finally, assertions of Neolithic pottery at one site, and Bronze Age lithics at several, really must be substantiated with some hard evidence, since these traditions are virtually unknown. I do not wish to treat a conference paper harshly, since conference volumes are not the proper format for detailed data presentation, but it is important to note that by and large, information about the Bronze Age in Epirus tends to be disseminated in such general treatments, never to receive full and detailed publication.

All of these interrelated problems have hampered attempts to comprehend the size, function, and other attributes of sites, and the ability to identify the nature of specific findspots in terms of categories such as “settlements,”

“sanctuaries,” or “special activity locations.” An example is provided by an attempt to interpret certain Bronze Age contexts as “settlements” (Papadopoulos 1976: 274–277). Of some 22 sites interpreted as locations of settlements, fewer than five had confirmed architectural remains. The rest were characterized as probable or possible settlements according to criteria that can only be guessed at; in a few cases, the coexistence of a datable burial and a surrounding scatter of hypothetically contemporary pottery or lithics provides reasonable grounds to suspect a settlement, but in many instances an isolated scatter of pottery or stone tools was interpreted as a likely settlement without explanation, or apparent consideration, of the context of deposition (Papadopoulos [1976: 274–277] recognized the problem). This example of unfounded speculation demonstrates the futility of attaching interpretive categories to archaeological phenomena which the data are not robust enough to support. In fact, most inferences about Bronze Age activity made from the archaeological record in Epirus, including subsistence strategies, patterns of settlement, and use of land and other resources, suffer from insufficient data and are generally speculative; I shall have cause to consider several of these interpretations in later chapters. The only remedy for a lack of basic knowledge is intensive, systematic field work that has as a primary aim the collection of data targeting specific problem areas.

There is greater clarity in the chronology of the Late Bronze Age, as a consequence of the appearance in Epirus of artifacts of foreign origin or inspiration that are stylistically datable. These artifacts are primarily sherds and vessels of Mycenaean and Balkano-Macedonian type, and bronze weapons and implements of Mycenaean and European types. Whereas much of this exotic material was brought to Epirus from abroad, locally produced bronze weapons that attained considerable sophistication are known from the latter stages of LH III. Imitations of Mycenaean fineware vessels were executed contemporaneously, but rarely achieved the competence evident in the metal work.

Artifacts of secure Late Bronze Age date have been found in settlement deposits, as grave goods, and in surface artifact scatters. Consideration of the contexts of discovery and the associated artifacts suggests that the use and deposition of these exotic goods were largely restricted to the Late Bronze Age; i.e., the continued use or preservation of objects as heirlooms does not appear to have extended very long into the Iron Age, if at all. This fact strengthens the admissibility of such objects as chronological indicators, but their temporal range is limited almost exclusively to LH III (ca. 1415–1050 B.C.). A few bronze knives and swords from Dodona and Mesogephyra may date to the last years of LH II on typological grounds (Soueref 1989b: 67; Kilian-Dirlmeier 1993), but their arrival in Epirus before LH III is not easily demonstrated. Furthermore, imports and imitations were recovered at fewer than half of the sites known in 1991, and so no effective dating tools were available for the majority at which artifacts of entirely local provenience were found.

PREVIOUS RESEARCH ON THE BRONZE AGE OF EPIRUS

The dating quandary noted for the Early and Middle Bronze Ages may therefore be extended to include LH I and II. The lack of well preserved primary contexts of deposition has also meant that the mere presence of chronologically secure artifacts does not necessarily lead to an appreciation of the spatial, functional, and cultural characteristics of human activity, nor even to an understanding of the interactions by which exotic goods arrived in Epirus and were distributed to the indigenous population.

In conclusion, it has not been an easy matter for prehistoric archaeology to take root and prosper in Epirus. After the belated emergence of the province from the Ottoman Empire, Epirus endured two world wars and saw the fiercest fighting of the tragic Greek Civil War. One result of the many difficulties is that even now, much of Epirus remains almost unknown archaeologically. Accordingly, a priority of the Nikopolis Project, a collaboration of Greek and American scholars, was to develop the kind of regional approach to data collection that would build a foundation of basic information for all periods of the past, so that in the future the difficult but interesting questions about Epirote antiquity can be addressed.

Endnotes

1. It might be further noted that many scholars reject the notion that double axes had strong ritual meaning in the Mycenaean world, arguing instead that the iconography was simply borrowed from Minoan representational art (e.g., Hooker 1976; Hägg 1985; but cf. Walberg 1988; Niemeier 1990).

2. I am grateful to Georgios Papaioannou for providing me with published and unpublished information on these sites. His dissertation work at King's College London involves developing an GIS-based database for the later prehistoric period of the nomos of Ioannina, as well as analysis of ceramic data from the excavations at Liatovouni. See Papaioannou 2003, and forthcoming.

Chapter 4: Bronze Age Sites and Other Findspots: Catalogue and Commentary

In this chapter I present a catalogue of Bronze Age findspots in the nomos of Preveza, accompanied by brief discussions of the finds and their context for each entry. The catalogue includes those findspots discovered by Nikopolis Project survey teams, as well as all those known to local archaeological authorities for which some documentation exists. It is unlikely that the catalogue includes every occurrence of Bronze Age material that has been reported, but a concerted effort has been made to extract from the literature and from the files of the Ephoreia of Prehistoric and Classical Antiquities in Ioannina as complete a record of Bronze Age finds in the nomos as possible.

Organization of the Entries

For the purpose of clarity, the entries have been organized by geographical zones within the nomos (Figure 4.1). These zones, which have no special significance for the Bronze Age, are as follows: 1) the drainage of the lower Acheron River and its tributaries; 2) the Ayios Thomas peninsula; 3) the Louros River valley; 4) a central zone encompassing the territory between the Acheron and Louros valleys; 5) a southern zone comprising the district surrounding the ancient city of Nikopolis; and 6) the vicinity of Parga in the northwestern corner of the nomos.

Site Data

Certain standard data are recorded for each entry, unless irrelevant or unknown for a given findspot, as follows.

Findspot designation and name

Three classes of findspot are recognized. A *site* is a dense, spatially definable scatter of artifacts that marks the debris of a settlement, or of some concentrated activity, such as lithic processing, quarrying, or agriculture. Standing monuments, such as walls and built tombs, are also included as sites. The application of strict numerical qualifications for the definition of sites and their boundaries was rather difficult on account of the variability of the find contexts. Many sites were exposed only in road cuts and other scarps for which estimations of surface extent and density calculated in the usual manner would have been impractical and misleading. The main criteria adopted for identification as a site are high density of material relative to that of the surrounding landscape, and notional boundaries, defined in the same relative terms, by which the site can be distinguished from low-density background material. All sites receive a designation unique to this study (following the practice in my dissertation), beginning with a prefix of **N** (Nikopolis Project site) or **E** (Ephoreia site), followed by an accession number; thus, site E-1 is a site with Bronze Age material first recorded by the Archaeological Service.

Off-site scatters (**OS** designation) are defined as low- to medium-density concentrations spatially divorced from, but

hypothetically related to, concentrations that have been designated sites. As with sites, there is a strong element of interpretation in this designation. The main criteria are physical separation from site concentrations, but notional association by virtue of proximity and similarity of artifactual composition, in addition to evidence that the artifacts in question are not simply part of a thin background of artifactual “noise” across the landscape. Off-site scatters were generally suspected to represent “haloes” of material surrounding sites, generated by various subsistence activities performed by the site’s inhabitants.

Isolated findspots (**IF** designation) record the discovery of very small concentrations of a few Bronze Age objects that have no apparent association with larger or more concentrated Bronze Age entities. I must caution the reader that owing to the nature of surface material, it cannot be assumed that isolated findspots delimit areas in which little or no activity took place in the Bronze Age (for the issue of prehistoric “hidden landscapes,” see Bintliff et al. 1999). These locations are simply ones in which few artifacts were observable on the surface at the time of the survey, and it is often not known whether the source material is abundant or scarce. A complex interplay of survey conditions and depositional and post-depositional processes influences the visible signs of ancient activity, and must be taken into account, as much as possible, in interpretation.

The names of the findspots are taken for the most part from local names printed on the 1:5,000 topographic maps that were used for navigation and plotting in the field. In many cases, it was necessary to use the name of the nearest village, as no local toponym was available. In certain locations, several findspots were discovered, and for clarity descriptors were appended to the proper name of the locality; e.g., *Alonaki Promontory*, *Koulia Grove*, *Pountas East*. Finally, a few sites are so well known by their presumed ancient names that these are retained; therefore, *Ephyra* instead of *Xylokastro*, and *Nekyomanteion* rather than *Ayios Ioannis*.

The reader should note three important details concerning findspot designations. First, all of the published and unpublished findspots reported by the Ephoreia have been entered as *sites*, because the data required to distinguish on-site from off-site material are lacking. Second, a **N** (Nikopolis) designation is given to any findspot at which a Bronze Age component was first detected in the surface survey; in several cases, Bronze Age material was discovered at sites for which other periods were known to the Ephoreia. Third, the names of the Nikopolis findspots are set in all capitals.

Nikopolis Project designation

The Site/Scatter (**SS**) designation and/or the survey unit(s) with which the findspot was investigated by the Nikopolis

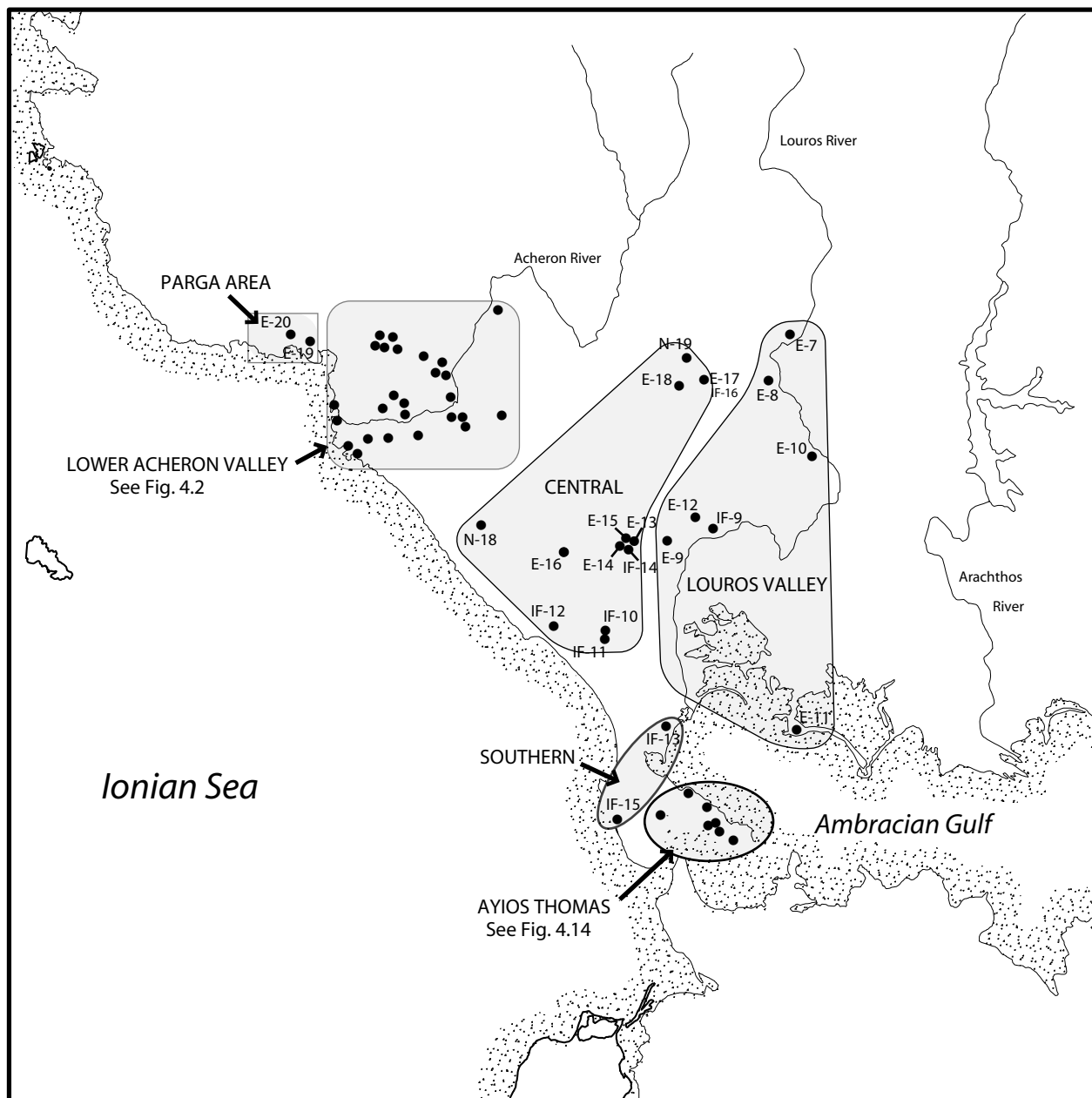


Figure 4.1 Map of Nikopolis Project survey area showing Bronze Age sites in the nomos of Preveza, and zones into which the Catalogue of Sites is organized.

Project are listed. Some sites, as defined in this catalogue, extend over more than one Nikopolis Project site designation; in these cases, more than one SS may appear. Whereas all of the findspots in this catalogue discovered by the Nikopolis Project were investigated initially as tract or walkover units, not all of them were ultimately designated site/scatters. In the latter cases, the original tract (T) or walkover (W) units are recorded. Some of the Ephoreia sites have received SS designations from the Nikopolis Project, whether or not they were investigated or revisited. If a designation exists, it is listed.

UTM coordinates

The location of a findspot on the earth is given in Universal Transverse Mercator (UTM) coordinates. The UTM

readings were taken with hand-held Magellan or Trimble Global Positioning Stations (GPS) at the notional center of the site, or the center of the survey unit in which lower-density Bronze Age material was discovered. The data were verified using registered digital maps in GRASS 4.0. It is not possible to assign UTM coordinates to most of the Ephoreia sites, for which only imprecise locational information exists.

Estimated area

One of the more difficult and subjective exercises was the estimation of the total size of a site or activity area. The size of a site describes the total surface area over which concentrated, spatially associated *Bronze Age* material was scattered. The areas, calculated in hectares, were estimated

BRONZE AGE SITE CATALOGUE AND COMMENTARY

Table 4.1 Summary of Bronze Age findspots, Preveza nomos.

<i>Findspot</i>	<i>ID</i>	<i>Zone</i>	<i>Findspot</i>	<i>ID</i>	<i>Zone</i>
Alonaki Promontory	N-1	Acheron valley	Stephani	E-12	Louros valley
Ayia Eleni	N-2	Acheron valley	Oropos-Barleta Hill	E-13	central
Kastriza	N-3	Acheron valley	Oropos-Vlachokalyva	E-14	central
Koroni	N-4	Acheron valley	Paliorophoros	E-15	central
Koronopoulos	N-5	Acheron valley	Kassope	E-16	central
Koulia	N-6	Acheron valley	Rizovouni	E-17	central
Koulia Grove	N-7	Acheron valley	Thesprotiko	E-18	central
Koumasaki	N-8	Acheron valley	Ayia Kyriaki	E-19	Parga area
Pountas	N-9	Acheron valley	Kiperi	E-20	Parga area
Pountas East	N-10	Acheron valley	Ammoudia	IF-1	Acheron valley
Skepaston	N-11	Acheron valley	Tsouknida	IF-2	Acheron valley
Spilaion	N-12	Acheron valley	Valanidorrachi	IF-3	Acheron valley
Vouvopotamos	N-13	Acheron valley	Ayia Triada	IF-4	Ayios Thomas
Xirolophos #1	N-14	Acheron valley	Ayios Minas	IF-5	Ayios Thomas
Xirolophos #2	N-15	Acheron valley	Oromos Vathy	IF-6	Ayios Thomas
Latomeion	N-16	Ayios Thomas	Pogonitsa	IF-7	Ayios Thomas
Skaphidaki	N-17	Ayios Thomas	Vassoula	IF-8	Ayios Thomas
Cheimadio	N-18	central	Eli	IF-9	Louros valley
Galatas	N-19	central	Ayia Odigitria	IF-10	central
Cheimerio-Kouteti	E-1	Acheron valley	Grammeno	IF-11	central
Dikorpho	E-2	Acheron valley	Kastrotykia	IF-12	central
Ephyra-Nekyomanteion	E-3	Acheron valley	Michalitsi	IF-13	southern
Kastri	E-4	Acheron valley	Oropos	IF-14	central
Themelo	E-5	Acheron valley	Preveza-Alonaki Beach	IF-15	southern
Skaphidaki cist grave	E-6	Ayios Thomas	Rizovouni	IF-16	central
Asprochaliko	E-7	Louros valley	Kastriza vicinity	OS-1	Acheron valley
Kokkinopilos	E-8	Louros valley	Pountas East vicinity	OS-2	Acheron valley
Louros	E-9	Louros valley	Vlachika	OS-3	Acheron valley
Philippiada	E-10	Louros valley	Skaphidaki vicinity	OS-4	Ayios Thomas
Salaora	E-11	Louros valley			

by observation during the initial intensive survey investigation, and modified, if necessary, in subsequent revisits. All Nikopolis Project sites were revisited, and an attempt was made to locate the Ephoreia sites, with mixed success. Boundaries could be reasonably established for most Nikopolis Project sites, but specific issues were repeatedly encountered in a minority of cases. Size estimation was problematic under the following circumstances: 1) where the material was clearly not in situ, especially where downslope transport was prevalent; 2) on scatters over large areas that were interrupted by significant portions of impassable or low-visibility terrain;

and 3) at several sites known only from road cuts and exposed scarps. In cases of secondary deposition or discontinuous survey coverage, every effort was made to determine the source and configuration of the primary context; estimations were made with the available data and are explained in the commentary. The size calculated for road cuts and scarps reflects only the area exposed, unless some justification was found for a larger figure.

Areas are not generally presented for the Ephoreia sites, unless information exists by which they can be calculated. Each site with an estimated area also receives a size rank,

BRONZE AGE SITE CATALOGUE AND COMMENTARY

adopted from those formulated by the Argolid Exploration Project (Jameson et al. 1994: 252): < 0.3 ha = small; 0.3–1.0 ha = medium; 1.0–10.0 ha = large; and > 10.0 ha = major.

Elevation

Elevations were read, without exception, from the 1:5,000 topographic maps, and are expressed in meters above sea level (masl). Apart from the fact that elevations could be determined with a high level of precision from the maps, it was found that altitudes calculated by the GPS units were inaccurate and therefore of little value. For very small scatters, a single figure is given; for anything larger the range of elevation over the entire estimated area of the scatter is supplied. For some isolated finds that were discovered in disparate survey units in the same general locality, the UTM coordinates and elevation represent a notional center of the locality (e.g., Michalitsi, Ormos Vathy).

Visibility

Ground visibility was ranked for every survey unit walked, from 1 (poor) to 10 (excellent). Because visibility was often highly variable even within a single tract, a score for each walker's survey line was reported. The range for the survey unit(s) is given, and a mean value to suggest which part of the range is most representative of the whole.

Pottery

The total number of sherds entered specifies the quantity of *sherds of prehistoric type* carried back from the field and studied as part of the Nikopolis Project contextual collection. This is not the same number as those counted, i.e., observed, in the survey units. It was the policy of the survey to retain all Bronze Age sherds of thumbnail size or larger, but even this liberal collection scheme entailed that large numbers would be left behind. At some sites, the mass of Bronze Age pottery was so large, or the sherds so fragmented, that collecting all or even most pieces was not practical. The quantity of sherds of a particular date that was left in the field can be estimated only in an impressionistic manner. Mention is made in the commentary for sites at which the proportion of uncollected material was significant.

The sherd total is broken down by fabric category in parentheses. Nearly all of the late prehistoric pottery could be assigned to one of four categories: K II/III, pseudo-Minyan (PM), orange-red fabrics (O/R), and Mycenaean (Myc). The identification of these types is crucial for site chronology. A detailed discussion of the morphology and chronology of all the later prehistoric pottery types of Epirus is presented in Chapter 5.

Flaked stone

Since no systemic typology exists for Epirote Bronze Age lithics, the figure listed is the total observed for the survey

unit(s) rather than the number collected and/or studied. At some findspots, Bronze Age pottery was found in intimate spatial association with lithics of a type described in Chapter 6 as a putative, local flaked-stone industry of the Bronze Age (see Table 6.1). For these instances, the certainty of association of the two classes of artifact is described either as *exclusive*, indicating intimate spatial association on sites at which pottery exclusively of Bronze Age type is present, or *high*, signifying intimate spatial association on sites at which pottery of periods other than the Bronze Age is present. Because the study of Bronze Age lithics in Epirus is at an initial stage, many assemblages have not been inspected as yet, and therefore it must not be assumed that the findspots characterized in this way are the only ones producing flaked stone of presumed Bronze Age type; nor is it accurate to say that a similar spatial association of Bronze Age pottery and lithics does not exist at other findspots reported in this catalogue.

Other evidence

Classes of evidence other than pottery and flaked stone that are associated with Bronze Age activity are entered, and described in the commentary.

Chronology

Findspot chronologies are based chiefly on the use lives proposed for the main pottery types (Chapter 5, Table 5.1). Additional chronological detail is provided by a small number of flaked stone tools datable by comparison with known Greek types (Chapter 6), and a few examples of standing architecture. The chronological ranges derived from a study of the pottery are as follows: K II/III = BA (general Bronze Age); pseudo-Minyan (PM) = post-MH (after Middle Helladic); Mycenaean (Myc) = LH III (Late Helladic III); and Orange-red (O/R) = EIA (Early Iron Age). Other chronological assignments are explained in the commentary. If a chronological assignment is made on the basis of fewer than three objects, the chronology is placed in parentheses.

References

If published reports exist, they are listed. The references are meant to be thorough, but not exhaustive for sites such as Ephyra and the Nekyomanteion, which have voluminous bibliographies. See the Appendix for the full list of references.

Commentary

The data summary is followed by a narrative entry in which particulars of the location and archaeological and geomorphological context are provided, and important results of the surface investigation are presented.

Nineteen Nikopolis Project sites, 20 Ephoreia sites, 16 isolated findspots, and four off-site scatters make up the catalogue (Figure 4.1, Table 4.1).

SITE CATALOGUE

1. Lower Acheron River Drainage (Figure 4.2)

ALONAKI PROMONTORY: Site N-1

Nikopolis Project designation: SS93-30
 UTM coordinates: N 43-39-798 E 4-56-748 (estimated)
 Estimated area: 0.08 ha (small)
 Elevation: 45 masl
 Pottery: 7 (7 K II/III)
 Flaked stone: 4
 Chronology: BA

This small promontory is located southwest of Alonaki Beach, extending southwest into the Ionian Sea. It is connected to the mainland by a narrow neck of sand and rocks that is only 6.8 masl. The site is steep-sided, and reached only with considerable difficulty and even some danger. The peak of the promontory, at 45 masl, is oval in shape and flattish on top.

The remains of a structure of polygonal masonry were recognized, perhaps belonging to a garrison or lookout post of the Hellenistic period. A looter's pit, dug inside the walls of the structure, revealed a profile in which Hellenistic sherds were observed. Slightly downslope to the southeast, and at a lower stratigraphic level, prehistoric sherds were found to be eroding out of an exposed soil horizon. Seven sherds from coarse K II/III vessels were collected, including one with a finely executed finger-impressed band. Four unretouched flint flakes are of a general type known from Bronze Age sites in the area.

AMMOUDIA: Isolated Findspot IF-1

Nikopolis Project designation: T93-129
 UTM coordinates: N 43-45-414 E 4-56-554
 Elevation: approximately 12 masl
 Pottery: 1 (1 K II/III)
 Flaked stone: 2
 Other evidence: traces of daub and/or burned earth features
 Chronology: (BA)

A small number of survey units were placed in the difficult terrain of the hill slope that formed the northern shore of the ancient Phanari Bay, and which now rises rather steeply from the level of the swamp. Open terrain with moderate ground visibility was found only in scattered olive groves near the foot of the slope. In one tract walked in a relatively open grove, scant evidence of Bronze Age activity was noted in the form of one sherd of K II/III type, and traces of daub and/or burned earth. The northern shore of the ancient bay was less suitable for maritime activity than the gentle contours to the south and east, where activity might be expected to have been more intensive. Easier routes of movement through the area were accessible with little difficulty. For these reasons, the cultural remains of the Bronze Age probably indicate episodic exploitation for

grazing, or even occasional visitation, rather than continuous occupation or intensive use.

AYIA ELENİ: Site N-2

Nikopolis Project designation: SS93-18
 UTM coordinates: N 43-42-415 E 4-55-012
 Estimated area: 0.60 ha (medium)
 Elevation: 8–14 masl
 Pottery: 2 (2 K II/III)
 Flaked stone: 4
 Other evidence: LH III (?) walls of cyclopean construction
 Chronology: (BA), LH III

This long ridge, named for convenience after the church on its north-facing slope, was in ancient times an island set in the entrance to the wide bay at the mouth of the Acheron River. The north slope drops steeply to Ammoudia Bay, where the Acheron River flows into the sea, and the western and southern faces form high, sheer sea cliffs. Today, the ridge is accessible by land from the reclaimed swamp on the eastern (landward) side; in the Bronze Age, access would have been from this direction, but by boat.

Most of Ayia Eleni ridge is densely covered with thick vegetation, except for an area of olive groves in the southern quarter. Remains of many periods are nonetheless scattered over the entire slope. The most notable features are well-built walls and structures of at least four different eras. Near the base of the eastern slope, two parallel lines of wall recall cyclopean masonry of Mycenaean type (Figure 4.3). They follow the natural contour in a north-south direction at 8 and 14 masl. The method of construction was to stack very large, unhewn or roughly hewn limestone blocks, and place smaller stones in the interstices for stability. The outward-facing surfaces were dressed, or the flatter quarry faces simply used, to achieve a relatively flat face. An exposed section of the lower wall indicates an original thickness of two blocks, in one place 2.0 m. No evidence of the original height of the walls (such as fallen blocks) is preserved; the tallest extant section is 1.50 m high. Evidence of repairs, of unknown date, using smaller stones was noted in several locations. The lower line could be traced for approximately 150 m, but the upper, deeply buried in thick vegetation, could only be traced for some 30 meters.

I regard these as belonging to the Mycenaean tradition, with possible functions as terrace walls, retaining walls for a road or building, or even defensive walls. Strong walls similar to these were used in southern Greece for agricultural terraces, bridges, and roads (e.g., Loader 1998; Wells, Runnels, and Zangger 1990; Hope Simpson 1981). The absence of obvious collapse debris makes it difficult to know if the original height of the walls was significantly greater. At their extant height, the walls do not impress the viewer as sufficient to provide useful protection. The two parallel lines of wall also must be explained: this could be

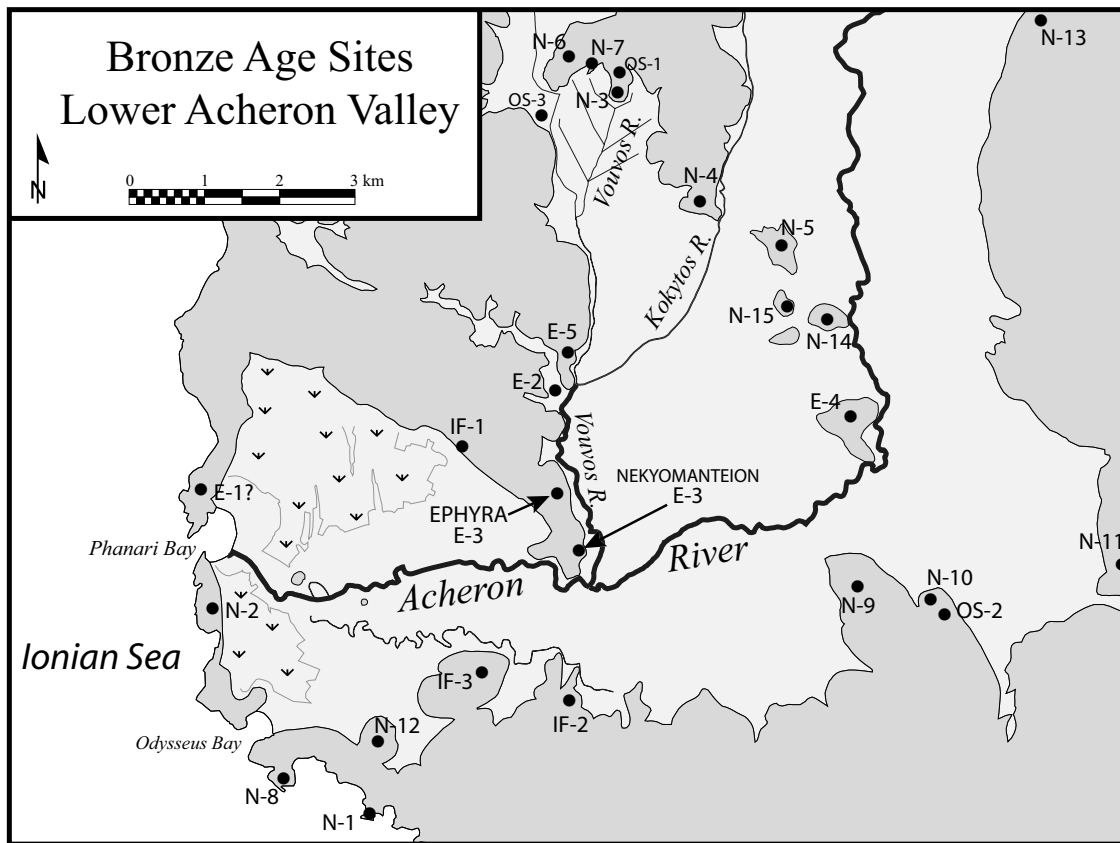


Figure 4.2 Map of lower Acheron valley showing Bronze Age sites. Adapted from base map courtesy Mark R. Besonen.

a defensive feature, a set of retaining walls for a ramp or road leading to the crest of the hill, genuine agricultural terracing, or something else entirely. The combination of thick vegetation, heavy historical overburden, and the likelihood that stones from the wall have been removed for reuse elsewhere or lost to gravity and erosion prevented us from gathering further useful information.

Only two sherds that can be assigned unequivocally to the Bronze Age were recovered at Ayia Eleni; these came from the terrace between the two putative Late Bronze Age walls. The four flaked stone artifacts are unretouched flakes of little interpretive value. Architectural blocks and structural remains were in fact the most ubiquitous artifacts scattered about the slope; sherds and lithics were not abundant for any period. A partial explanation for this phenomenon may be sought in a cycle of use and abandonment of the ridge over time, resulting in several episodes of erosion and small artifact burial. The Bronze Age material might now be stratified beneath settlement debris from Hellenistic, Roman, Medieval, and modern times. It appears that the cyclopean walls were repaired and reused in at least one subsequent period, perhaps until they fell apart or no longer served the purposes to which they were dedicated.

Cheimerio-Kouteti: Site E-1

Nikopolis Project designation: not investigated by

Nikopolis Project

Elevation: reported as 140–145 masl, but possibly higher
Chronology: BA (?)

References: Dakaris 1971a: 63; Mouselimis 1989: 44

School teacher and avocational archaeologist S. Mouselimis reported to Dakaris the existence of a walled acropolis at the highest point of the rocky Glossa promontory north of the modern Ammoudia Bay. He found remains of wall foundations in heavy vegetation at a location known as “Kouteti” or “Stygia,” and associated them with the dark city of the Cimmerians, a landmark encountered by Odysseus and his crew in their journey to the Kingdom of the Dead (*Od.* 11: 14–22). Although Nikopolis Project personnel searched this ridge on at least two occasions, the existence of the remains could not be confirmed.

Dikorpho: Site E-2

Nikopolis Project designation: not investigated by
Nikopolis Project

Elevation: 12 masl (estimated)

Chronology: BA, (LH III)

Reference: Andreou 1994: 242, figs. 27, 28

At the small settlement of Dikorpho, lying between the acropolis at Ephyra and the village of Themelo, many



Figure 4.3 Ayia Eleni: cyclopean walls of possible Bronze Age date.

sherds from handmade prehistoric vessels, two bases of Mycenaean kylikes, and several stone tools were found. No additional contextual information or artifact description was reported.

Ephyra (Xylokaastro)-Nekyomanteion Ridge: Site E-3

Nikopolis Project designations: SS92-33, SS94-10

UTM coordinates: N 43-43-774 E 4-59-668

Estimated area: Total 56.85 ha: 38.25 ha Ephyra acropolis and slopes; 3.60 ha saddle; 15.00 ha Nekyomanteion (Ayios Ioannis Prodromos hill). Approximate area of Ephyra citadel + intensively utilized western slope: 20.0 ha (major) Elevation: Ephyra 24–82 masl; saddle 8–42 masl; Nekyomanteion 8–64 masl

Visibility: entire range (see comments below)

Pottery: 486 (459 K II/III; 12 PM; 7 O/R; 8 Myc)

Flaked stone: 299; association with Bronze Age pottery high

Other evidence: a small, circular earthen mound may be a burial tumulus (SS 94-10)

Chronology: BA, post-MH, LH IIIA–C, EIA

References: *Xylokaastro-Ephyra*: Dakaris 1958a, 1958b, 1962, 1963a, 1963b, 1963c, 1972a: 28–29, 62–63, 1975a: 149–152, 1975b, 1975c, 1976b, 1977a, 1977b; Hammond 1967: 64–65, 302, 313, 478, 482, 661; Papadopoulos 1976: 275–278, 280, 282–284, 290–292, 303, 319, pl. 1, 1978, 1979, 1980, 1981a, 1982, 1983, 1984, 1986a, 1986b,

1987a; Dakaris and Papadopoulos 1976; Hope Simpson and Dickinson 1979: 299–300; Hope Simpson 1981: 175–176, pl. 27; Soueref 1986: 62–68, figs. 4, 6, 10, 14, 16, 31–33, 36, 44; Tartaron 2001, in press

Ayios Ioannis-Nekyomanteion: Leake 1835: (I)185, 231–234, 242, (III) 3, 7, 35, (IV) 7–8, 51–56; Philippson and Kirsten 1956/8: 39, 101, 104, 212–213; Dakaris 1958a, 1958b, 1960a, 1960b, 1962, 1963a, 1963b, 1963c, 1967c: 32, 1972a: 28–29, 32, 62–63, 1975a, 1975b, 1975 c, 1976a, 1976b, 1977a, 1977b; Lepore 1962: 14; Hammond 1967: 65–66, 285, 291, 313, 319–320, 326, 362, 366, 369, 387; Vokotopoulou 1969b: 193–194; Scoufopoulos 1971: 90–91; Snodgrass 1971: 172; Papadopoulos 1976: 277–278, 280, 284, 290–292, 303, 316; Hope Simpson and Dickinson 1979: 299–300; Tzouvara-Souli 1979: 102–105; Soueref 1986: 62–68, figs. 4, 6, 11, 12, 30, 31

The prominent north–south limestone spur jutting out into the plain at the confluence of the Acheron and Vouvos rivers is dominated at opposite ends by two well known and extensively excavated sites, the northern fortified hill known as Xylokaastro (ancient Ephyra; Figures 4.4, 4.5) and the southern eminence surmounted by the monastery of Ayios Ioannis, popularly held to be the site of the famous Nekyomanteion. (See Chapter 3 for a discussion of the archaeological remains and the significance of these sites in the Bronze Age.) In 1994, intensive survey was conducted over most of the ridge *outside* the walls of the two sites, in an effort to estimate the extent of settlement

in various periods, and to detect changes in the spatial focus of activity over time.

Interesting patterns emerged in the form of strong chronological signatures that appear to document subtle locational shifts from prehistoric to historical times. The ridge was partitioned into four notional zones for investigation: a) the gentle western slope beneath the enclosure wall at Ephyra; b) the steep eastern face below the acropolis of Ephyra; c) the saddle between the northern half of the ridge, upon which Ephyra is situated, and the southern half, which is occupied by the hill of Ayios Ioannis; and d) the southern hill of Ayios Ioannis, where the Nekyomanteion is located, and the moderate slope ascending to it (Figure 4.6). Intensive survey tracts walked at five-meter intervals were placed over much of the ridge, in all areas that were negotiable and in which ground visibility offered some hope of results. Much of the ridge is covered by dense, tall stands of asphaka, acanthus, and grasses. The best visibility was encountered on the many sheep and goat tracks crisscrossing the slopes, and in areas cleared for animal pens and rudimentary herders' quarters. The following account summarizes briefly some of the more important patterns discerned from a preliminary analysis of the data.

Ephyra west slope

The contour of Ephyra's western face gradually flattens with decreasing elevation, creating an extramural zone ideal for a "lower town," if one ever existed. Conditions of visibility were highly variable, determined by the density of vegetation. The majority of artifacts were discovered on the many goat paths and small clearings scattered about the area.

In this zone, the archaeological assemblage was dominated by pottery sherds and flaked stone of late prehistoric type. Most of the nearly 1,000 sherds counted were fragments of vessels of K II/III class, many of them trampled to a size smaller than a thumbnail by sheep and goats (Table 4.2). Some 230 flint flakes, almost exclusively unretouched, were recovered chiefly near the base of the hill; their formal characteristics match those proposed for a Bronze Age flaked-stone industry in southern Epirus (see Chapter 6). The flint objects comprise more than 18% of all artifacts observed. By contrast, approximately 120 fragments of tile and brick were noted, forming less than 10% of the artifact assemblage.¹ Historical pottery, primarily of Hellenistic and Roman date, accounted for a moderate percentage, perhaps similar to that of tile and brick. Although the precise proportions represented by each artifact type and each chronological period have not been worked out as yet, there can be no doubt that a strong Bronze Age signature characterizes the western slope.

The distribution of finds and the contexts of discovery on the western slope suggest that some of the material has been washed down the slope over time, and some has been exposed close to the location of its initial burial. The surface

finds from higher elevations near the outer enclosure wall bear signs of wear from being rolled or washed down from above. As this section of the slope is considerably steeper than the terrain below it, it is less likely that buildings were founded upon it. Evidence for exposure close to the original location of deposition or discard comes from the level terrain at the base of the hill and to the west. It could be argued that the base of the slope is a natural collection point for artifacts transported down the hill over time, but there are indications that much of the material found here must derive from activity that took place below the walled settlement. In the level ground to the west, across the modern road connecting the villages of Mesopotamos and Themelo and between the Ephyra-Nekyomanteion ridge and Kephali hill, a tract (T92-65) produced copious Bronze Age sherds in a patch that had been freshly bulldozed to a depth of 0.2 meter or less. The pottery appeared just below the thin topsoil layer, in a dark reddish brown soil identical to that in which Bronze Age material was discovered throughout the survey area. Finally, at 33 masl on the western slope a small earthen mound (SS 94-10) was discovered that resembles the form of LBA-EIA tumuli that are known at Ephyra and other sites in Epirus. Some stones that may have originally encircled the mound were found strewn around it, but surface indications do not provide enough information for a secure identification.

The survey data indicate an extension of the settlement of Ephyra, or at least intensive use of the western area by its inhabitants, in the Bronze Age. The full extent of the lower town or exploitation zone is not precisely known, but it seems to have included a portion of the level terrain between Ephyra and Kephali hill. Although the western slope was most fully utilized in the Bronze Age, a city of Ephyra is attested on this ridge in Classical and Hellenistic times (Thuc. 1.46), and structures, ceramics, coins, and other materials from the Hellenistic period were unearthed in excavations within the walls (e.g., Papadopoulos 1982, 1983).

The steep eastern slope below the acropolis

The eastern slope is too steep to have been settled, or to have witnessed economic activity, apart from grazing flocks of animals. There is no evidence of terracing of the slope to allow attempts at agriculture. The defensive advantage conferred by the gradient must, on the other hand, have contributed to the selection of this site for a walled citadel.

Several survey units were walked along the base of the eastern slope. Near the northeastern point of the ridge, adjacent to a channel of the Vouvos River, spoil heaps containing historical and prehistoric pottery were discovered and investigated. A few sherds of Mycenaean pottery were among the motley sample. The source of the material could be one or more of the following: spoils from dredging the western channel of the Vouvos; material excavated in the recent construction of a pumping station; or spoil heaps from an excavation carried out by Dakaris somewhere in the vicinity in 1958 (Dakaris 1958a: 112).

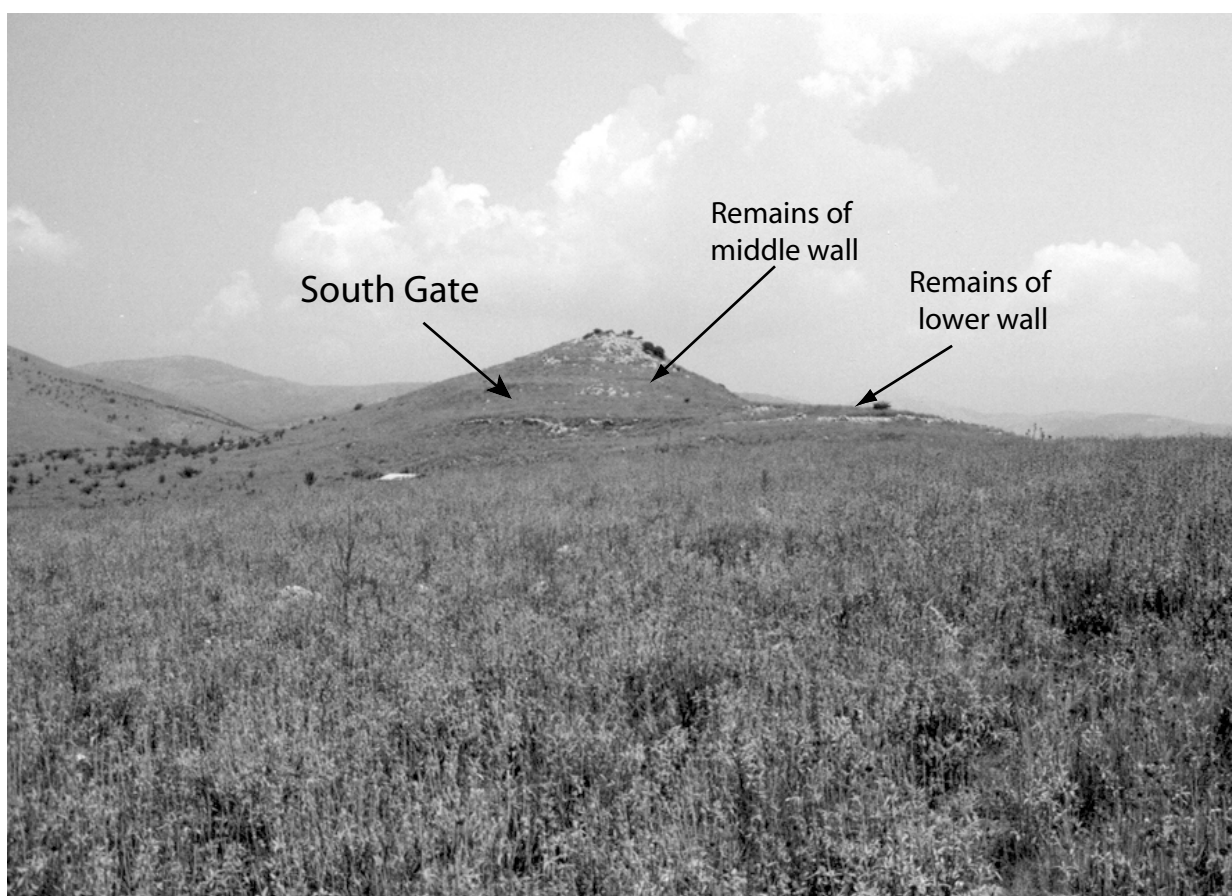


Figure 4.4 View of Xylokastro (Ephyra) hill, facing north. Extant segments of the enclosure walls are indicated.



Figure 4.5 Detail view of the monumental South Gate of Ephyra, facing north-northwest.

BRONZE AGE SITE CATALOGUE AND COMMENTARY

Table 4.2 Percentage abundance by artifact type, Ephyra-Nekyomanteion ridge.

<i>Zone</i>	<i>Pottery</i>	<i>Bricks/Tiles</i>	<i>Flaked Stone</i>
Ephyra west slope <i>n</i> = 1274	72.4	9.5	18.1
Ephyra east slope <i>n</i> = 145	76.5	16.6	6.9
Saddle <i>n</i> = 436	73.4	20.4	6.2
Nekyomanteion vicinity <i>n</i> = 471	70.5	25.9	3.6

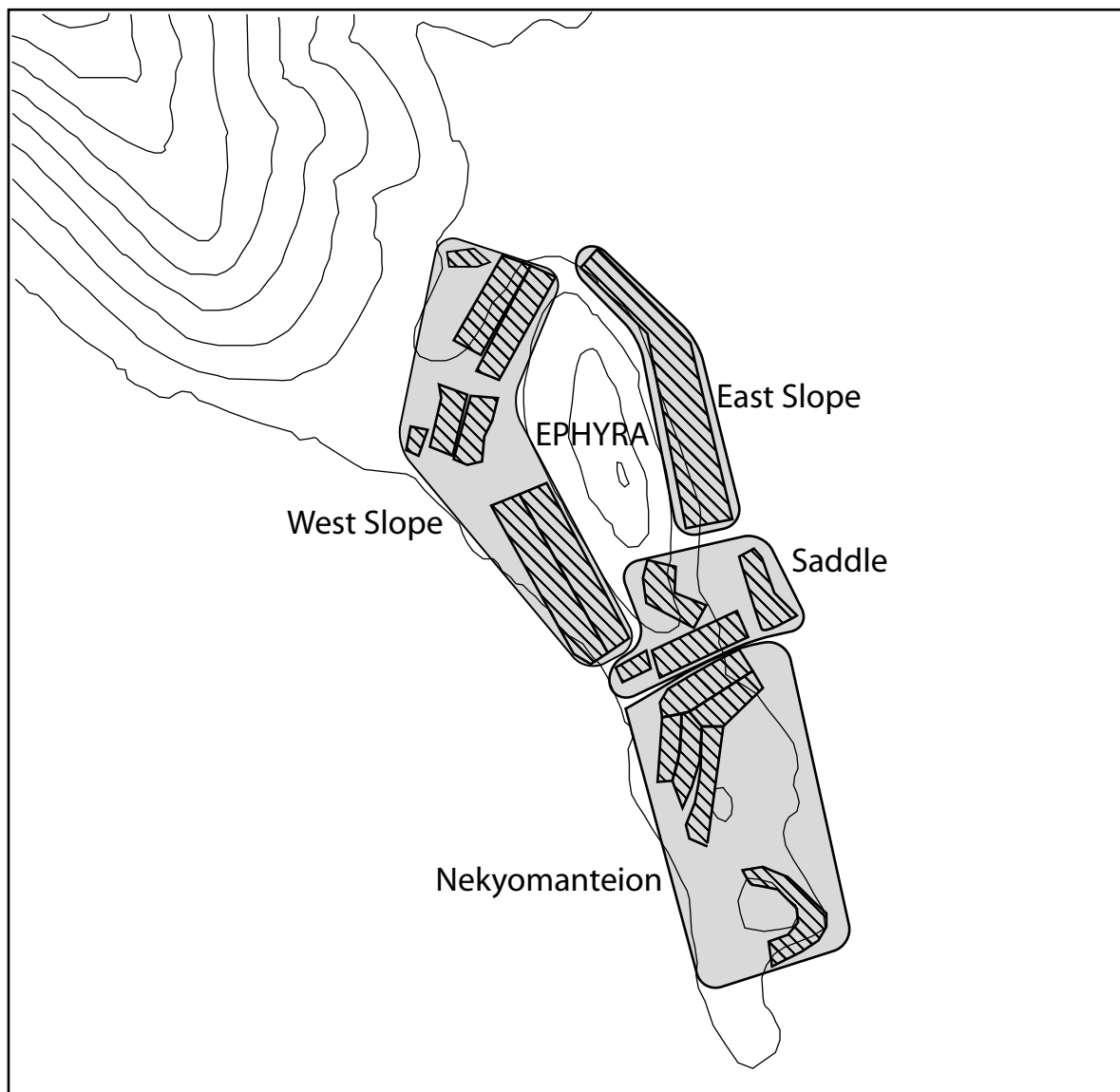


Figure 4.6 Plan of Ephyra-Nekyomanteion ridge, showing the locations of survey units and zones of analysis.

An additional contribution may come from artifacts rolled down the slope. Other survey units extended south along the base of the eastern slope yielded small quantities of both prehistoric and historical material.

The saddle between the Xylokaastro and Ayios Ioannis hills

Several survey units were placed in the small saddle between the South Gate of Ephyra and the small rise just north of the fortified precinct known as the Nekyomanteion (Figure 4.6). Vegetation was heavy in this zone, with dense stands of asphaka and other garrigue shrubs. Visibility and progress were impeded, except in an animal pen, and in randomly distributed bare patches and animal tracks. Coverage included the eastern slope of the ridge, the level crest of the saddle, and the moderately inclined terrain to the west.

Distinct spatial patterns emerged in the composition of the artifact assemblages (Table 4.2). Nearer the monumental southern gate of Ephyra's lower wall, Bronze Age material predominated. As survey teams moved to the south, the mix of prehistoric and historical material became roughly equal. The percentage of tiles and bricks rose to 20.4% of all artifacts observed in the saddle units, and historical pottery (including sherds from black-slipped vessels and later amphora fragments) was much more prominent, although precise percentages of historical vs. prehistoric pottery are not yet available. At the same time, flaked stone dropped to only 6.2%. The saddle zone appears, therefore, to be transitional between the prehistoric focus of Ephyra and the historical focus that was to be documented further south. The flattish crest of the saddle was utilized in both late prehistoric and historical times, but in each case the main settlement was elsewhere.

Vicinity of Ayios Ioannis hill

Visibility was particularly poor in the survey units walked on the hillock abutting the Nekyomanteion on the north. In spite of difficult survey conditions, we recognized that historical material formed the bulk of the cultural material in this zone (Table 4.2). The percentage of tiles and bricks reached 25.9%, and historical sherds were found to greatly outnumber those dating to late prehistory. Flaked stone comprised only 3.6% of the artifact total. A walkover performed outside the walls of the Nekyomanteion on the northern, eastern, and western slopes produced an assemblage in which roof tiles and bricks constituted over 90% of the artifacts, while Bronze Age material was present but rare. Little stock may be placed in the statistics from this walkover (which are not included in Table 4.2), however, because most of the tiles are debris from excavations of the 1950s and 1960s, and from periodic replacement of the roof of the church of Ayios Ioannis Prodromos. The historical signature of the other material was nonetheless unmistakable.

Three cist graves and scattered Bronze Age material, including a small number of sherds from imported

Mycenaean vessels, were excavated within the Nekyomanteion complex over the years by Dakaris (1963b, 1963c, 1967c, 1976b, 1977b). There is nothing unexpected about the discovery of Bronze Age activity there, but the meager finds must be placed in the perspective of the massive Hellenistic presence at the Nekyomanteion on the one hand, and the intensive use of Ephyra in the Late Bronze Age on the other.

Conclusion

The entire ridge was exploited both in late prehistory and in Hellenistic times, and perhaps in other periods (such as the Roman period) as well. Decades of excavation have created the impression that a Late Bronze Age community was concentrated at Ephyra, while in historical times, human activity focused on an Oracle of the Dead on Ayios Ioannis hill. Intensive survey confirmed such a shift in spatial focus on the ridge. In addition, a locus of Bronze Age activity was documented on the gentle western slope beneath the walls of Ephyra, which may represent a "lower town" or resource exploitation area. This area may extend 250 meters west of the outer walls of Ephyra. The shores of an ancient bay enveloping the modern Phanari plain west of the Ephyra-Nekyomanteion ridge lay within about 300 m of the outermost wall at Ephyra (Chapter 7).

The pottery recovered from the surface of the ridge manifests considerable variation, as would be expected from a settlement of demonstrated importance. The assemblage of K II/III pottery includes a full spectrum of coarse to fine specimens, and at least a dozen sherds that can be associated with shapes inspired by Minyan or pseudo-Minyan prototypes. Only eight Mycenaean sherds were securely identified, a surprisingly modest quantity given the relative abundance of Mycenaean ware discovered in excavation. The fragmentary, worn condition of the surface material accounts for some difficulty in making identification, especially in distinguishing Mycenaean fragments preserving no decoration from historical buff fabrics. The recognition of several sherds from orange/red wares provides a good indication that a settlement continued in some form into the Iron Age at Ephyra.

The association of the flaked stone with Bronze Age pottery is considered high, particularly in light of the spatial patterns discussed above. A study of the flint flakes from the strongly prehistoric survey units at Ephyra, along with other sites of similarly high association, was instrumental in developing a provisional conception of the native Bronze Age tool industry (Chapter 6).

Kastri: Site E-4

Nikopolis Project designation: SS94-20
UTM coordinates: N 43-45-002 E 4-63-275
Estimated area: 33.00 ha (major)
Elevation: 16-96 masl

Visibility: 2–10; mean 6
 Pottery: 41 (40 K II/III; 1 Myc)
 Flaked stone: 41
 Chronology: BA, (LH III)
 Reference: Dakaris 1971a: 29 and n. 93

Dakaris reported the discovery on the eastern slope of Kastri hill of prehistoric sherds of K II type and a fragment of a Bronze Age celt. In 1994, an urban survey (see Chapter 2) was conducted by the Nikopolis Project on the accessible southern and eastern sectors of Kastri, resulting in total surface coverage of approximately one-third of the hill (ca. 11.0 ha). Prehistoric pottery was distributed in moderate quantities throughout the surveyed area. The sherd total furnished for Kastri is only an estimate based on brief inspection of lots after initial cleaning; the volume of artifacts of all periods retrieved was so enormous that accurate figures will be obtained only after considerable time and effort. The final tally for Bronze Age pottery will likely be higher, but not significantly so. A more interesting possibility is that additional ceramic types, such as Orange-red or Pseudo-Minyan, will be recognized.

The modest figures for Bronze Age artifact types must be attributed in part to the intensive use of the hill in subsequent periods. A considerable overburden of Classical, Hellenistic, and Roman occupation has removed most traces of earlier activity, except in cases of fortuitous and random post-depositional processes by which Bronze Age material has been exposed. Kastri must certainly have been a settlement of primary importance in the Late Bronze Age, and probably earlier. Its position astride the Acheron River, defensibility, and view over the entire lower Acheron region gave it advantages not shared by the smaller hills on which significant Bronze Age presence was detected in survey. These qualities explain the choice of Kastri as a strongly fortified citadel settlement in historical times.

KASTRIZA: Site N-3

Nikopolis Project designation: SS94-27
 UTM coordinates: N 43-49-378 E 4-60-413
 Estimated area: 5.38 ha (large)
 Elevation: 20–40 masl
 Visibility: 1–8; mean 5
 Pottery: 116 (95 K II/III; 5 PM; 11 O/R; 5 Myc)
 Flaked stone: 45; association with Bronze Age pottery high
 Other evidence: enclosure wall using cyclopean masonry, possibly of Late Helladic date
 Chronology: BA, post-MH, LH III, EIA
 References: Dakaris 1972a: 100, 135; Tartaron 2001

The site occupies a low limestone hill approximately 2 km northwest of the village of Koroni, on the south side of the main road leading toward Margariti (Figures 4.7, 4.8). The location of the site, its environmental context, and the surface indications are all of great interest in illuminating important aspects of life in the region during the Bronze

Age. The hill overlooks the lower Vouvos River floodplain. The Vouvos channel, fed by runoff from the surrounding slopes, flows south along the western side of the plain before joining with the Kokytos River near Themelo. The united river then continues south to its confluence with the Acheron near the village of Mesopotamos. The round eminence of Kastriza extends southward over the plain at the head of this small valley, and is surrounded on all sides except the north by low-lying, marshy plain.

In the modern context, the plain has been converted to rich, moist agricultural land by a project of drainage and canalization sometime before 1971 (when the drainage channels are marked on the 1:50,000 topographic map). Until that time, however, the plain consisted of floodplain deposits, including backswamp of the Kokytos River system. In late prehistoric and historical times, the floodplain was inundated by a seasonal lake, and deep swamp or marsh for the balance of the year. Kastriza was approached on land from the north by means of a neck or saddle connecting the site to the moderately sloping foot of Koulia hill.

The environmental context provides clues to the resources available to Bronze Age inhabitants. Fresh water was readily available from the stream or seasonal lake directly adjacent to the site. The backswamp offered a variety of resources, including building materials (mud, straw, reeds) and grazing for cattle. Limestone was available to be quarried on the hill itself and throughout the area. The moderately contoured terrain to the north provided space for agriculture, and grazing of sheep and goats could be practiced on the steeper slope of Koulia and other local heights, where timber may also have been abundant. On the far side of Koulia, a shallow depression more than a kilometer in length and somewhat less wide was partially occupied by a lake until it was drained in the last two decades. This feature is classified as a *polje*, a term used to describe large-scale limestone solution depressions (Ford and Williams 1989: ch. 9). Poljes are usually closed systems, and thus are often characterized by the presence of seasonal lakes and rich wetland flora and fauna. As sources of fresh water and vegetation, they must also have been attractive to animals. Located a kilometer from Kastriza, this polje could have been easily exploited for hunting and gathering. All of the resources necessary to sustain the life of a community of moderate size were thus obtainable within a one-kilometer radius from the site.

The fortification wall at Kastriza

The cultural remains from Kastriza and surrounding sites (Koulia, Koulia Grove) confirm very active utilization of the region in late prehistory. The most remarkable feature on Kastriza hill is a strongly built fortification wall enclosing a portion of the ridge. The wall, however, does not form a circuit: the southern face of the hill, overlooking the floodplain, was never enclosed. The absence of a complete circuit makes perfect sense in light of the

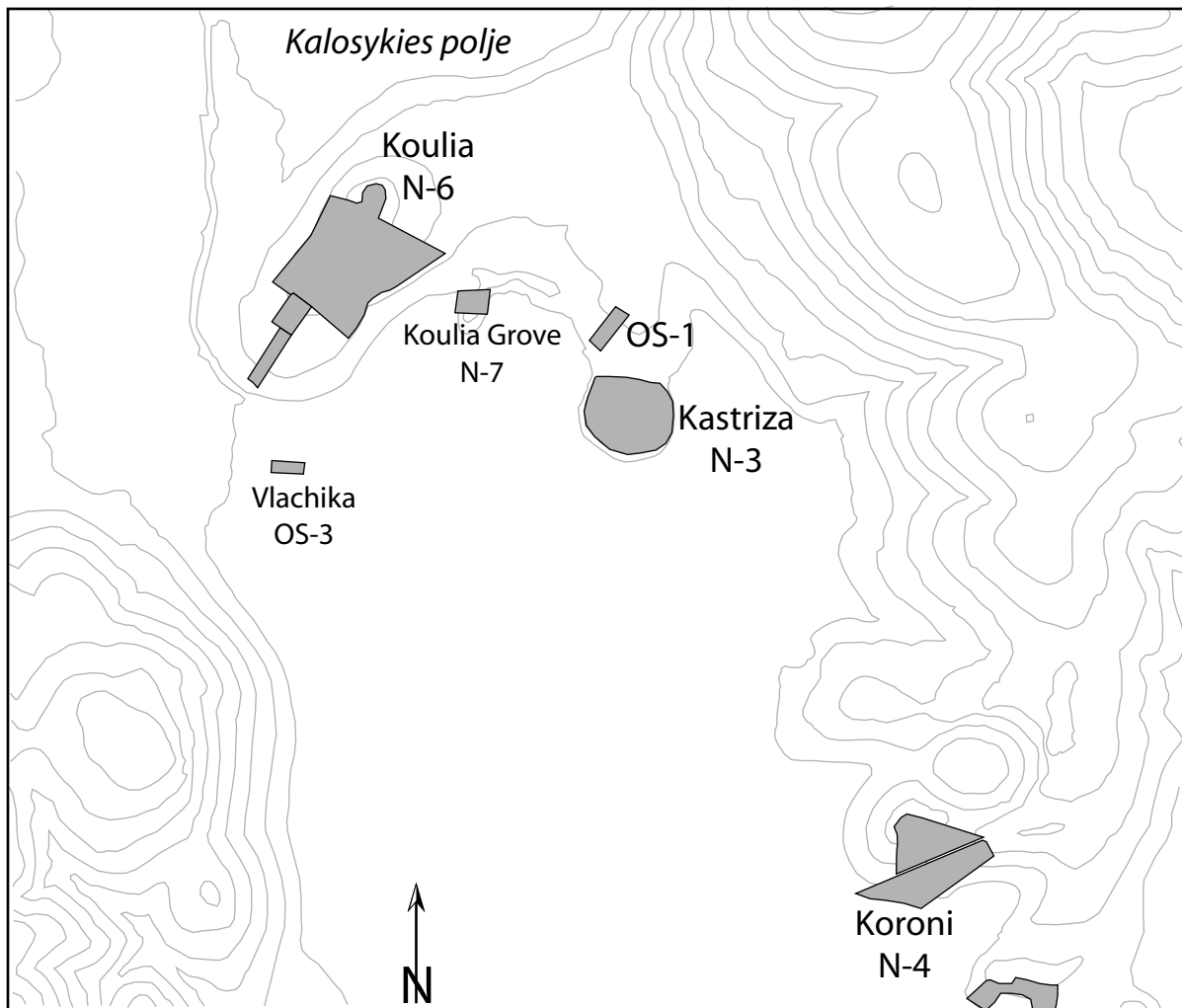


Figure 4.7 Topographic map of the site of Kastriza and its environs in the Vouvos River valley.



Figure 4.8 View of Kastriza hill and its setting, facing northwest.

environmental information. If the floodplain was occupied by a lake or deep marsh/swamp, it would not have been necessary to defend the settlement from that direction, except perhaps by a wooden palisade. This would seem particularly true of perennial backswamp conditions, which would have been extremely unfavorable to invading forces. The wall defends the vulnerable northern face of the hill that lay above the level of the plain, particularly the neck of land that would have presented a bridge for invaders. On the western side of the hill, the line of the wall crosses the natural contours to run to the level of the plain, a fact that rules out a function as a terrace wall. The placement of the wall only at vulnerable points, along with its considerable thickness and strength, permit us to infer a primarily defensive function.

The wall was investigated by Dakaris (1972a: 100, 135), who pronounced it a Classical/Hellenistic construction employing polygonal masonry. From the first day of survey on the site, I found myself uncomfortable with the dating and description of the construction techniques. In subsequent visits alone and with colleagues, I became convinced that the evidence favors a Bronze Age date and construction techniques in the cyclopean tradition.² The hypothesis that this wall was built in the Mycenaean tradition to protect a LH III settlement is based on a series of observations made on the wall, and the results of a survey unit walked on the hill:

1. *The form of the wall and method of construction.* The limestone blocks are of irregular shape (Figures 4.9, 4.10). They were hammer-dressed or roughly cut to fit the wall; in places where the fit was not ideal, smaller stones were pushed into the interstices in the cyclopean fashion. No evidence of drafting could be found. The boulders were quarried on the site, and the quarry faces were left exposed on the wall exterior. In several places, huge, irregular bedrock outcrops formed the base of the wall, upon which smaller, quarried blocks were fitted to the odd shape of the bedrock (Figure 4.9). Much of the exterior face on the western side of the hill is preserved to a height of three or four boulders. The considerable thickness of the wall was measured at 2.9–3.0 m in several places, although slope wash and other debris precluded an unobstructed view of the inner face. The core of the wall was formed by stone rubble (Figure 4.10).

A well preserved gateway with flanking bastions in the northwestern section underscores the concern with defense (Figure 4.11). The passage is about 3 m wide and preserved to a length of 5 m; the bastions are not fully preserved, but may be about 6 m wide as reported by Dakaris (1972a: 100). The entrance gate itself, which is lost or buried, must have been at the interior terminus of the gateway. The configuration of the gateway recalls, on a smaller scale, the “killing field” outside the Lion Gate at Mycenae, where aggressors were funneled into tight packs and exposed to murderous volleys from the bastions and walls above. This military device also inspired the configuration of the South Gate at Ephyra.

2. *The absence of features normally associated with walls of historical times.* Just as important as the similarities to Late Bronze Age construction is the absence of features normally encountered in later walls. Several fortified citadel sites dating to Classical and Hellenistic times are known in southern Epirus, and at many of them well preserved circuit walls are available for comparison. These walls employ ashlar or Lesbian polygonal masonry in which blocks are tightly and skillfully joined in courses without the use of mortar or smaller interstitial stones. Other walls of Roman and later times in the region use bricks and mortar in wall construction. Signs of drafting are conspicuously absent in the wall at Kastriza, as are traces of bricks or mortar. The stones cannot be said to be in courses; rather, they are fitted together in the cyclopean fashion. Moreover, the tiles that might be expected to have surmounted the mudbrick superstructure of a wall constructed in ashlar or polygonal masonry are lacking. No tiles were found within the wall, and in fact very few were observed in the survey unit.

3. *Appearance and weathering of the limestone.* The limestone boulders that make up the wall are severely weathered in most places, and have a very gray color. The limestone walls at Ephyra and Ayia Eleni have a similar appearance, which may be the result of longer exposure than the whiter, less weathered walls of local Classical and Hellenistic fortified sites. This observation is merely the empirical recognition of a pattern, and though it may suggest a relative chronology, it is not an attempt to date walls by their color or degree of weathering.

4. *Results of survey on the hill.* Surface survey on Kastriza turned up copious Bronze Age artifacts, a moderate amount of historical pottery of the Hellenistic and Roman periods, and significantly, only a few dozen fragments of brick and tile. If the wall was built to enclose a settlement of the Classical or Hellenistic period, more settlement debris might have been expected. The lack of roof tiles is particularly meaningful in view of their ubiquity at other walled settlements in the area.

A single survey unit with team members spaced at 15-meter intervals encompassed the entire hill. Visibility was highly variable in a terrain of alternating bare patches and thick maquis vegetation. The artifacts observed by the team date overwhelmingly to the Bronze Age. Hundreds of sherds of local Bronze Age coarseware (K II/III) were counted, along with small amounts of sherds from Mycenaean and Orange-red vessels. A similar quantity of flaked stone consistent with the general typology proposed for the local Bronze Age was reported. The modest quantity of Mycenaean sherds recovered (five were recognized) is somewhat troubling, but it is worth noting that only eight were found on the surface at Ephyra, in spite of the relative abundance of Mycenaean pottery known from excavation there.

If the assignment of the fortification wall and its settlement to LH III is correct, the location of Kastriza takes on added



Figure 4.9 View of exterior face of the cyclopean wall at Kastriza. Photograph courtesy Nikopolis Project.



Figure 4.10 Exposed top of wall at Kastriza, showing external wall face at right and thick rubble core. Photograph courtesy Nikopolis Project.



Figure 4.11 View of the gate at Kastriza, facing south into the settlement. Photograph courtesy Nikopolis Project.

importance as intermediate between the two localities of confirmed Mycenaean presence in Epirus: the mouth of the Acheron River, and the neighborhood of Parga. A plausible inland route skirted the east of Themelo, passing by Kastriza and continuing north toward Margariti before branching south toward Ayia Kyriaki and Kiperi. The possible role of Kastriza in connecting two Mycenaean centers, or Mycenaeans with indigenous peoples, will be considered in some detail in Chapter 8.

KASTRIZA VICINITY: Off-site Scatter OS-1

Nikopolis Project designation: T94-52
 UTM coordinates: N 43-49-547 E 4-60-292
 Elevation: 30 masl
 Visibility: 2–6; mean 5
 Pottery: 3 (3 K II/III)
 Flaked stone: 10
 Chronology: BA

Due north of the fortified hill site of Kastriza, across the modern road from Koroni, Tract T94-52 (Figure 4.7) yielded three sherds of K II/III type and 10 flint flakes of typical late prehistoric type in the area. The tract lacks evidence of concentrated activity, but the Bronze Age material is probably related to Kastriza, or to activity loci to the west on Koulia hill (site N-6) or Koulia Grove (site N-7). One might envision this flattish area as ideal for agricultural pursuits for the residents of Kastriza, surrounded as they were on the south, east, and west by lake or swamp.

KORONI: Site N-4

Nikopolis Project designation: W93-33
 UTM coordinates: N 43-48-171 E 4-61-145
 Estimated area: 1.00 ha (medium)
 Elevation: 40–79 masl
 Visibility: 1–7; mean 5
 Pottery: 25 (25 K II/III)
 Flaked stone: 3
 Chronology: BA

Northwest of the village of Koroni, a walkover was performed on a small limestone ridge perched above a large doline (Figure 4.7). A scatter of sherds from K II/III coarseware pots was found on the middle and higher elevations.

KORONOPOULOS: Site N-5

Nikopolis Project designations: SS94-7, SS94-8
 UTM coordinates: N 43-47-168 E 4-62-486 (SS94-7); N 43-46-985 E 4-62-603 (SS94-8)
 Estimated area: 0.35 ha (SS94-7: 0.35 ha; SS94-8: 0.001 ha) (medium)
 Elevation: SS94-7: 44 masl; SS94-8: 30 masl
 Visibility: 1–7; mean 4
 Pottery: 93 combined (89 K II/III; 4 Myc)
 Flaked stone: 8
 Chronology: BA, LH III

BRONZE AGE SITE CATALOGUE AND COMMENTARY

Koronopoulos is a small limestone hill rising out of the lower Acheron plain southeast of Koroni. Most of the ridge is now covered by modern settlement, but the southern end offered open terrain for surface investigation. Bronze Age pottery was detected at two locations, one near the base of the hill and one nearer the crest at the limit of modern development. At the former location, near the southernmost point of the ridge, a small patch of exposed soil yielded close to 90 sherds of K II/III type. A small number of flint flakes were associated with the pottery, and are probably also of Bronze Age date. Subsequent study revealed that four sherds from imported Mycenaean ware are among the finds. Some two hundred meters upslope, a few Bronze Age sherds were collected in a very dense concentration composed primarily of historical tiles.

KOULIA: Site N-6

Nikopolis Project designation: W94-34
UTM coordinates: N 43-49-777 E 4-59-622
Estimated area: 0.60 ha (medium)
Elevation: 88–96 masl
Visibility: 2–8; mean 6
Pottery: 11 (11 K II/III)
Flaked stone: 478; association with Bronze Age pottery high
Chronology: Neolithic–BA; BA

A conspicuous limestone ridge rises to almost 100 masl northwest of Kastriza where the modern road turns northward to Margariti (Figure 4.7). The village of Tzara is situated on the plain directly west of Koulia ridge. Surface survey revealed that the middle and upper elevations of the ridge were littered with flaked stone artifacts, including several arrowheads diagnostic of the Neolithic and Early Bronze Age, and an endscraper on a blade that is probably of Bronze Age date. Natural flint nodules were observed in great abundance on the hill, leaving no mystery about the source of the raw material for the ubiquitous flakes. The lithics were most densely concentrated at the summit and higher terraces, although moderate amounts were found scattered down the southeast and northwest faces to the 40-m contour or even lower. Small fragments of Bronze Age pottery were discovered on the summit of the hill and within 25 meters to the southwest. All of the sherds derive from coarse K II vessels.

The prehistoric exploitation of the upper reaches of Koulia ridge was probably focused in the late Neolithic and earlier phases of the Bronze Age. The density of flint nodules and flakes suggests a locus of tool production. The position of the summit, with a wide view of a natural passage through the high hills of the area, would have been ideal for monitoring the movements of migrating animals and other humans. The polje at Kalosykies, a probable gathering point for animals (see entry for Kastriza above), lay in full view to the north. In this interpretation, a function as a hunting lookout is suggested: hunters fashioned flint

arrowheads and other tools while scouting from the excellent vantage point at the summit. The modest quantity of pottery at the summit may be explained as casual breakage during tool making or scouting episodes.

KOULIA GROVE: Site N-7

Nikopolis Project designation: SS95-7
UTM coordinates: N 43-49-616 E 4-59-921
Estimated area: 0.60 ha (medium)
Elevation: 14 masl
Visibility: 6
Pottery: 30 (26 K II/III; 4 PM)
Flaked stone: 9; association with Bronze Age pottery high
Other evidence: stone structural foundations of unknown date
Chronology: BA, post-MH

A small, level olive grove on the south side of the Koroni–Margariti road a few hundred meters west of Kastriza (Figure 4.7) attracted our attention for the same reason the latter site did—its position extending into the Kokytos-Vouvos backswamp just a few meters above the level of the plain. As at Kastriza, this grove yielded primarily Bronze Age material, discovered in patches of exposed dark brown soil. Much of the soil had been turned up by recent plowing and excavation of circular plots for the planting of new trees.

Dozens of K II/III sherds, including a few for which pseudo-Minyan shapes are proposed, were observed in an intensive survey tract and during a revisit to the site in 1995. Also noted were isolated piles of badly weathered limestone blocks and boulders in clumps of thick bushes. Upon closer inspection, it appears that these are centered on the strong foundations of small (apparently rectangular) stone structures that could not be uprooted by the plow. It is a common practice for farmers to plow around such obstinate constructions, and then to pile loose boulders from the rest of the field upon them. The foundations in question may belong to structures built in the Bronze Age, but it was impossible from surface inspection to extract chronological information about them.

An interesting and important find is a segment of a tiny, elegant obsidian blade (TST-6). The obsidian is likely to be Melian on the basis of visible characteristics of the stone (C. Runnels, personal communication 1995). The piece may have been imported to this area in an early phase of the Bronze Age, but a later date within the Bronze Age is equally feasible.

The accumulated evidence from Koulia Grove indicates that it witnessed activity in both the earlier and later phases of the Bronze Age. The function of the site is unsure, but its situation perched over the Vouvopotamos floodplain suggests that the inhabitants exploited riverine and wetland resources. If the limestone foundations do belong to Bronze

Age structures, a community contemporary with, and perhaps dependent on, the fortified settlement at Kastriza might be imagined.

KOUMASAKI: Site N-8

Nikopolis Project designation: SS92-24
 UTM coordinates: N 43-40-402 E 4-55-871
 Estimated area: 32.00 ha (major)
 Elevation: 10–50 masl
 Visibility: 1–10; mean 4 (highly variable)
 Pottery: 213 (207 K II/III; 6 Myc)
 Flaked stone: 1,284; association with Bronze Age pottery high
 Chronology: BA, MH–LH, LH III

This double-lobed limestone promontory extends into the Ionian Sea south of Kerentza (Odysseus) Bay near the mouth of the Acheron River (Figure 4.2). The northern edge of Koumasaki was in ancient times part of the shoreline of the wide bay that occupied the modern plain in this area. The contours rise gradually from that level to high cliffs overlooking the open sea to the south. In 1994, the diachronic survey teams were alerted by members of the Paleolithic survey to the existence of prodigious quantities of prehistoric lithics and pottery littering the whole of the promontory. Extensive recent bulldozing had brought this material to the surface and exposed several low scarps. It was ultimately found that virtually every road, path, and bare spot was blanketed to varying degrees with artifacts from all phases of prehistory.

A number of survey units were focused on the exposed soil; the rest of the promontory was mantled in thick stands of coniferous trees and dense maquis vegetation that afforded little mobility or visibility. All exposed areas that could be identified were searched intensively, with the result that prehistoric sherds numbering in the hundreds and flint flakes and tools in the thousands were observed. Only a small fraction of the lithics in particular could actually be counted; the total lying on the surface in 1994 may be 10 times the figure recorded above or more.

Bronze Age pottery sherds were found on all parts of the promontory, but were especially concentrated on the gentle contours near the northern edge facing the plain. Nearly all are of K II/III type, but six sherds of imported Mycenaean ware, two perhaps from a single vessel, were collected. The lithic assemblage held some exciting surprises. Among the flaked stone artifacts were a shouldered point of Upper Paleolithic type, an arrowhead of Neolithic type, and at least three sickle elements preserving silica gloss that find parallels in southern Greece in the Middle and Late Bronze Ages.

The exposed scarps along freshly bulldozed roads offered a unique opportunity to study the geomorphology of the site. In conjunction with the surface exploration, three

exposed scarps on the northern side of the promontory were carefully studied and sampled. All three of the exposures were approximately one meter in depth and five to six meters in length. Each consisted of two distinct levels: an upper layer of dark brown soil and a lower layer of deep red sediment. In all cases, prehistoric sherds and flaked-stone pieces were mixed with smaller quantities of historical artifacts in the upper brown soil layer.

The mixing of artifacts deposited hundreds or even thousands of years apart can be explained with reference to the complex depositional history of the promontory. The lower, red horizon noted in the scarps is the late Middle Paleolithic living surface. It consists of deposited river material, and coarse but well sorted dune sands that built up as a result of longshore drift. Since that time, cycles of soil formation and erosion have repeated, such that no stable, well-formed soil has appeared above the red Pleistocene sediment. The Bronze Age living surface may in fact have been above the modern surface; erosion, accelerated perhaps by fire, wind, or human land clearance, has reduced the soil and resulted in the mixing of artifacts by a process of conflation.

The archaeological and geomorphological evidence provides many clues to the sorts of activities that prevailed at Koumasaki in the Bronze Age. At the foot of Koumasaki, visible deposits of beach sand indicate that the ancient bay had sandy shores at this spot, which would have been an ideal location to haul boats and their contents ashore in the Bronze Age from about 3–5 meters of water. The lithic material imparts much important information as well. The ubiquity of flakes and the presence of ample small pebble cores point to a flaked-stone industry on a substantial scale in the Bronze Age. The diversity of flint colors suggests that some raw material was brought to Koumasaki from elsewhere. Many of the flakes also show the scars of an episode or episodes of intense burning, which may have been effected by land clearance or other human action, and may have contributed to the erosion of the soil cover. Silica gloss adhering to sickle blades of Bronze Age type demonstrates that the inhabitants gathered wild plants, practiced agriculture, or both. Blades of this sort may also have been used to cut reeds and cane for the construction of baskets and shelters. The chronological evidence from lithic and ceramic artifacts suggests that Koumasaki was utilized in MH–LH times at least.

The accumulated data favor an interpretation of Koumasaki as the site of a thriving settlement in the Bronze Age, possibly a large village with a small landing area for boats plying the wide bay, the rivers, and perhaps the Ionian Sea as well. Imported pottery and stone tools (or knowledge of their manufacture) found their way to the settlement. The inhabitants manufactured stone tools, and collected wild plants or farmed domesticated plant species. The rich marine resources of the bay must also have been exploited. It is likely that Koumasaki, positioned across the bay from Ephyra, played some role in the heightened activity

BRONZE AGE SITE CATALOGUE AND COMMENTARY

instigated in this region by contact with the Mycenaean world. Koumasaki's strategic position was enhanced by a wide view of the open sea to the south, permitting maritime traffic to be detected long before it appeared at the mouth of the bay.

POUNTAS: Site N-9

Nikopolis Project designation: SS94-11
UTM coordinates: N 43-42-870 E 4-63-629
Estimated area: 0.08 ha (small)
Elevation: 83 masl
Visibility: 9
Pottery: 24 (23 K II/III; 1 O/R)
Flaked stone: 254; association with Bronze Age pottery exclusive
Chronology: BA, (MH-LH), (EIA)

The prominent ridge of Pountas juts out into the lower Acheron plain from the south, pointing to the northwest like a large thumb (Figure 4.2). The ridge would appear to have been an ideal location for human occupation. The view over the entire floodplain is as expansive from Pountas as anywhere in the region. Although Pountas is relatively steep-sided, a series of level plateaus forming the spine of the ridge would seem to be inviting platforms for settlement. A potential problem with fresh water supply may be indicated, however, by a large modern cistern that was observed on one of the plateaus.

Pountas may be indirectly associated with a Homeric tradition surrounding the lower Acheron plain. Dakaris (1960a: 204–205, pl. 172; see also Hammond 1967: 66) reports that until the plain was completely drained, a “phosphorescent” subterranean stream flowed past the base of Pountas, and between March and June a rumbling, echoing noise could be heard from the water flowing underground. The stream was thought to then join the Acheron as the latter emerged from the Acherousian Lake. Dakaris identifies this stream with *Pyriphlegethon*, the “fire-blazer” of the *Odyssey* (10.485–487).

Surface survey units were placed on several of the level plateaus along the spine. Little ancient material of any period was found, except on a plateau at 82–85 masl. Pottery and flaked stone of Bronze Age type were found in substantial numbers on and around a gravel field access road running north–south up the slope. It was discovered that the artifacts were exposed by the road construction from a dark brown to dark reddish brown soil. The pottery was comprised of around 100 small to tiny fragments of K II/III ware. The single exception was a sherd from an Orange-red vessel that should date to the Early Iron Age. The flaked stone assemblage, numbering more than 250 specimens, was dominated by unretouched flint flakes and small pebble cores, which together suggest that the manufacture of simple tools took place on site. A fine tanged arrowhead of brown flint (NST 94-14) is characteristic of

the MBA–LBA in Greece. Small amounts of Bronze Age pottery and flaked stone were also found in tracts walked to the west, usually in open spots among stands of asphaka and acanthus.

The site at Pountas may have been a temporary encampment or special activity locus (e.g., for the manufacture of tools and scouting the plain), if the acquisition of water was indeed a problem.

POUNTAS EAST: Site N-10

Nikopolis Project designation: SS94-6
UTM coordinates: N 43-42-739 E 4-64-621
Estimated area: 2.0 ha (large)
Elevation: 16–33 masl
Visibility: 4–10, mean 7
Pottery: 52 (46 K II/III; 5 PM; 1 O/R)
Flaked stone: 112
Chronology: BA, post-MH, (EIA)

An eastern extension of the Pountas ridge, separated from the main formation by a ravine, was called by our team “Pountas East” in the absence of a known local name. A fascinating multi-period site on the lower slopes was discovered, concentrated most densely just above the level of the modern plain. The copious finds establish repeated, and perhaps continuous, occupation from the Bronze Age to modern times. The late prehistoric component existed as a sort of undercurrent to the much more voluminous historical material, but Bronze Age pottery and lithics were noted in moderate quantities in all of the survey units associated with the site.

Because of the gradient of the slope and clear signs of erosion, the original location and spatial extent of Bronze Age activity on the site are not precisely known. It appears that, at least in the historical periods, the focus of settlement truly was near the base of the hill. Bronze Age artifacts were also most abundant on the lowest terraces, but were found in survey units extending some 400 m up the ridge to contours over 80 masl, forming a low-density background of material (see OS-2).

The prehistoric pottery is mainly coarse handmade ware of K II type, but several sherds can be assigned to the finer end of the K II/III spectrum, and five of these to pseudo-Minyan shapes. A single sherd of an orange-red fabric may date to the Early Iron Age. Many of the flint flakes collected in survey units are probably of Bronze Age date, although some look to be late Paleolithic types.

Consideration of the geomorphological context may assist in interpretation. There is first the problem that the artifact scatter does not appear to be in situ. The main artifact concentration is sitting for the most part on bedrock, although some soil is preserved in the southern half of the site. This observation implies that soil was lost over time

from the higher elevations on the slope, and presumably artifacts were washed down in the process. Because of some flattish areas above the 40-m contour, however, the transport may have come chiefly from below that elevation. The loss of soil may have begun in the Bronze Age or even earlier.

In addition to a lack of good soil to till, the inhabitants were confronted with less-than-ideal natural surroundings. Situated just above the level of the plain, the site overlooked the backswamp of the Acheron levee system. The swamp was at its deepest near Pountas East, so it was probably never dry, and in fact may have been a seasonal lake. If mosquitoes bred in these swamps in the Bronze Age, this site must have been a malarial backwater. Moreover, the site could never have been protected from serious attack. The movement of humans and animals could not have been effectively monitored from the vantage point of the settlement, whereas this low tongue of land is clearly visible from the high ground surrounding it. Enemies could fall upon it quickly and without warning.

The function of the settlement and the reason for its placement are therefore not obvious. The many animal folds and small villages in the foothills overlooking the eastern Acheron plain make sense in the modern context, after the draining of Lake Acherousia and the surrounding swamp opened new, fertile agricultural land. Yet several of these villages were recorded by Leake, and archaeological remains at places like Pountas East demonstrate repeated occupation through the millennia. One senses that people occupied the same sites over and over simply because others had before them, long after any advantage the location had held in earlier periods had vanished with the changing conditions of time. Continuity may have been encouraged by the availability of building material in the debris of an old settlement.

In view of the indefensible and possibly unpleasant position at the foot of the Pountas East ridge, one might envision the settlement as a satellite or dependency of a larger entity, most likely Kastri, in plain view less than three kilometers away. Such an arrangement may have existed in many periods, as Kastri, with its expansive view and defensible acropolis, was well placed to dominate the plain. In times of peace or low population density, Pountas East could perhaps have survived independently, but peace must often have been enforced by an overarching entity. The ability of a community at this location to be economically self-sufficient must arouse skepticism as well.

I prefer to see in the Bronze Age debris the remains of a special purpose site serving many functions in support of a larger settlement, almost certainly Kastri. It may, for example, have been a base for grazing sheep, goats, pigs, and cattle owned by the community at Kastri. Because Kastri was surrounded by floodplain, lake, and swamp, additional land was required to supplement the open space on the ridge, which may have been usurped by residential

areas, cemeteries, and other loci not directly related to subsistence production. The foothills to the east must have been ideal for the grazing of animals, which constituted a substantial share of the wealth of any ancient polity, and perhaps small-scale agriculture when the floodplain was unavailable. Those who lived or worked on Pountas East may also have exploited the products of the swamp. Reeds, willows, and rushes served as building material for wattle-and-daub structures, and as weaving material for baskets and mats. Traps, nets, and lines for fishing could also be fashioned from swamp vegetation. The heavy wetland clays could be mined for raw material to manufacture mudbricks and ceramics.

The community that persisted for so long at Pountas East may not have been occupied year-round in the Bronze Age, and must always have been small, since the soil and the locally available resources could not have supported a large population.

POUNTAS EAST VICINITY: Off-site Scatter OS-2

Nikopolis Project designation: T94-20, T94-27, W94-11, W94-28

Elevation: 44–84 masl

Visibility: 2–9; mean 5

Pottery: 16 (16 K II/III)

Flaked stone: 63

Chronology: BA

Up the slope from the main concentration of artifacts at Pountas East, a moderate background scatter of Bronze Age sherds was encountered in four survey units, extending from the small church of Ayios Dimitrios at 50 masl, to an area of rough karstic topography around 80 masl. Several of the sherds were found in spoil heaps next to a bulldozed platform near the highest elevation. The flaked-stone artifacts were mainly white patinated pieces that may be of Upper Paleolithic date.

SKEPASTON: Site N-11

Nikopolis Project designation: W93-60

UTM coordinates: N 43-44-411 E 4-68-957

Estimated area: 0.006 ha (small)

Elevation: 308 masl

Visibility: 10

Pottery: 7 (7 K II/III)

Flaked stone: none

Other evidence: animal bones (8)

Chronology: BA

This site is located in the rugged hills overlooking the southeast corner of the lower Acheron plain, above the modern town of Kanallakion (Figure 4.2). It consists of a road cut scarp on the west side of the gravel road skirting Veteriki hill between the villages of Skepaston and Kato

Skaphidoti, approximately 1.4 km north of Skepaston.³ Exposed in the stratigraphy of the scarp were two anthropogenic layers. The first of these, at 10–20 cm below modern surface, consisted of historical tiles and sherds extending for about 10 meters along the scarp. Several centimeters below this stratum, at 25–35 cm below modern surface, a prehistoric layer comprised of mixed pottery sherds and animal bones was followed laterally for more than five meters. Neither stratum appeared to be a primary context of deposition; the U-shaped profile of the strata suggested an erosional gully. The seven sherds recovered from the scarp are all from coarse handmade ware of K II type. The bones have not been examined by an expert, but the tooth of an ovicaprid is among them.

In the modern era, this is an isolated, dry, and marginal context. It is difficult to believe that a living could be scratched out here without articulation to markets and supplies from elsewhere. Yet in a single afternoon we saw remains of prehistoric, Hellenistic, Byzantine, and Ottoman times. A plausible solution was suggested by a large spring, dry during our July visit, located below the modern road little more than half a kilometer north of Skepaston village. Was this a lush, more hospitable place in ancient times, at least seasonally in the wetter months? Precipitation data from the nearby village of Ano Skaphidoti (see Chapter 7) indicates that this is a distinct possibility. The discovery of an ovicaprid tooth might be interpreted as evidence of grazing in the Bronze Age, but it is impossible to know whether the persons who owned these animals lived on the site, in communities on or near the plain below, or simply passed by on their transhumant migrations.

SPILAION: Site N-12

Nikopolis Project designation: SS92-37, SS92-22, and others
 UTM coordinates: N 43-40-931 E 4-57-226
 Estimated area: 30.25 ha (major)
 Elevation: 2–46 masl
 Visibility: 2–10; mean 7
 Pottery: 171 (170 K II/III; 1 PM)
 Flaked stone: 5,921
 Chronology: BA; (post-MH)

Spilaion is a large, low limestone hill that formed part of the southern shore of the ancient bay on the Ionian Sea (Figure 4.2). In spite of a sometimes rough karstic landscape, sparse maquis vegetation and numerous open olive groves provided ideal visibility for surface survey; accordingly, most of the penetrable terrain was subjected to intensive survey. Notably vast numbers of lithic tools and debris were observed on every portion of the hill. The bulk of these belong to an industry of Upper Paleolithic type, characteristically covered with a porcelain-white patination (for a detailed analysis of the high-density Upper Paleolithic lithic scatter, see Runnels, Karimali, and Cullen 2003). Unpatinated flint flakes of presumed Bronze Age

type were also found in all areas of the hill. The Bronze Age pottery was not concentrated in one or a few locations, but instead spread in moderate amounts over the entire hill. An unusual feature of the pottery is that almost every piece belongs to a large, thick-walled vessel of the kind used for storage and perhaps cooking. The heaviness of the assemblage is unique to Spilaion (see Table 5.3 for comparative data), suggesting the possibility of a specialized role, such as a focal point for surplus storage, or a warehousing facility servicing maritime trade. The gently sloping southern shore at Koumasaki and Spilaion is the most suitable spot in the ancient bay for putative trading boats to come ashore. A community living on Spilaion must have been primarily focused on the bay, for unlike Koumasaki, there was no unobstructed view of the open sea to the south.

Themelo: Site E-5

Nikopolis Project designation: not investigated by Nikopolis Project
 Chronology: BA
 References: Andreou 1994: 242

On Vigla hill northwest of the village of Themelo, sherds from handmade vessels of Bronze Age type were collected, and the foundations of structures assumed to be of Bronze Age date were noted.

TSOUKNIDA: Isolated Findspot IF-2

Nikopolis Project designation: W94-67
 UTM coordinates: N 43-41-213 E 4-50-516
 Elevation: 8–20 masl
 Visibility: 1–6; mean 3
 Pottery: 1 (1 K II/III)
 Flaked stone: 14
 Chronology: (BA)

East of the village of Tsouknida, a pair of connected hillocks protrude into the Acheron plain from the south. They seemed to be promising spots for finding evidence of Bronze Age activity, but to our disappointment, mobility and visibility were exceedingly difficult. Olive groves on both rises were densely overgrown with grasses and weeds. Visible ground was encountered mainly along a narrow path on the southern hill, on which most of the artifacts were noted. One sherd was positively identified as a K II type; two others may be prehistoric. The lithic pieces are in the main white patinated flakes that are probably older than the Bronze Age.

It is impossible to assess Bronze Age activity at this location. Should these hillocks be cleared at some time in the future, they ought to reward close inspection.

VALANIDORRACHI: Isolated Findspot IF-3

Nikopolis Project designations: T93-141, W93-76
 UTM coordinates: N 43-40-834 E 4-58-459
 Elevation: 26–33 masl
 Visibility: 2–8; mean 6
 Pottery: 3 (3 K II/III)
 Flaked stone: 890
 Chronology: BA

Several survey units were walked in the undulating terrain between the modern Preveza–Parga highway and the large hill occupied by the village of Valanidorrachi. On a flat tongue of land some 400 m south of the village, a few sherds of K II/III type were collected on a site dating primarily to Roman times. A few similar sherds were picked up closer to the highway. Abundant small, unpatinated flint flakes of many colors were collected, but have not yet been closely studied. Sadly, we discovered in 1995 that widespread bulldozing and land clearance south of Valanidorrachi has transformed the landscape and destroyed several fragile archaeological sites.

VLACHIKA: Off-site Scatter OS-3

Nikopolis Project designation: T94-54
 UTM coordinates: N 43-49-255 E 4-59-545
 Elevation: 13–16 masl
 Visibility: 8
 Pottery: 1 (1 K II/III)
 Flaked stone: 5
 Chronology: (BA)

A single tract walked in an olive grove bordering the swampy plain a few hundred meters southwest of Koulia ridge (Figure 4.7) yielded one sherd of K II type, and a small number of flint flakes plausibly of Bronze Age date. The proximity of this survey unit to the Koulia-Kastriza sphere of late prehistoric activity argues for inclusion in it.

VOUVOPOTAMOS: Site N-13

Nikopolis Project designation: SS92-12
 UTM coordinates: N 43-50-385 E 4-66-069
 Estimated area: 1.40 ha (large)
 Elevation: 68–95 masl
 Visibility: 4–9; mean 8
 Pottery: 409 (389 K II/III; 15 PM; 2 O/R; 3 Myc)
 Flaked stone: no count available, 43 collected from site;
 association with Bronze Age pottery high
 Other evidence: daub and burned earth features
 Chronology: BA; post-MH; LH III; (EIA)

A very large Bronze Age site was first discovered in 1992 just south of the village of Vouvopotamos (Figures 4.2, 4.12), on the eastern slopes above the Acheron plain about 14 km northeast of the mouth of the Acheron River, and

revisited several times in 1993 and 1994. The construction of a switchback gravel road snaking up the mountainside had disturbed prehistoric strata replete with sherds, lithics, and other evidence of a substantial settlement. The cultural material was ultimately found over an area of 1.4 hectares, although there was every indication that the site continued to the north in terrain unexposed by modern works. Whereas the north-south extent of the site is unknown, the scatter of material was fairly securely localized between 68 and 95 masl in the east-west (upslope) dimension. Exposed road scarps above and below these contours did not produce cultural material. This observation has some significance for fixing the approximate location of the prehistoric settlement, because many of the buried artifacts are not in situ, having been transported by slope wash in antiquity. The absence of artifacts above 95 masl suggests that the source of the settlement debris cannot be much farther upslope, since at least some remains would be expected above that level if the source were much higher. It appears likely that the settlement was arrayed on a long, narrow swath along the natural contours, much as the villages on this side of the plain tend to be today.

Hundreds of sherds and flaked stone artifacts were collected from a dark brown soil at the site, and hundreds more were observed during several visits. The pottery assemblage was dominated by coarseware (K II/III), a reasonable proportion of which was of the finer variety (K III) and a number from probable pseudo-Minyan vessels. The other major wares were represented by three light-buff body sherds from provincial Mycenaean vessels, and two sherds of an orange-red fabric that should date to the Early Iron Age. Hundreds of flint flakes were also noted, although the association with Bronze Age pottery was clear for only a small number of them, and there may be an earlier, Paleolithic, contribution to the corpus of lithics. Additional evidence of the nature of Bronze Age occupation was detected in the form of chunks of daub and concentrated burned earth features found in association with the pottery. These in situ features further fix the location of the settlement.

Between the 1992 and 1993 field seasons, a massive European Community-supported public works project was begun to run an aqueduct along the contours of the eastern slopes. Wide gravel roads were cut and graded to accommodate large vehicles, and a cement aqueduct was installed at Vouvopotamos during the winter. To our great disappointment, the aqueduct and its clearance destroyed the densest part of the site, including the spot where daub and burned earth had been noted. On the positive side, the cuttings for the aqueduct exposed more of the site to the north, which was investigated to much benefit.

The exposure of several natural and anthropogenic strata in multiple scarps at Vouvopotamos offered the potential for profitable investigation of the geomorphological context and the conditions of site formation.⁴ Three main subsurface strata make up a generalized soil profile for the site (Figure



Figure 4.12 View from the Bronze Age site at Vouvopotamos to the Acheron plain below, facing west. Photograph courtesy Nikopolis Project.

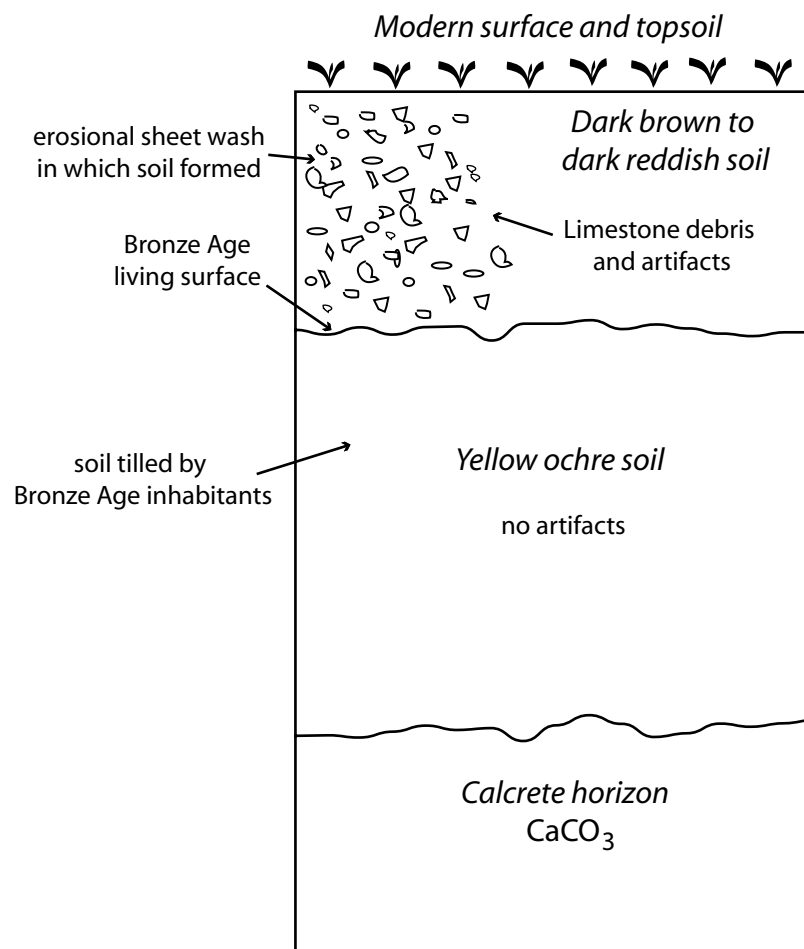


Figure 4.13 Vouvopotamos: simplified soil profile.

4.13). Below the very thin modern topsoil is a dark brown to dark reddish brown soil horizon up to one meter thick. This soil is characterized by debris flow incorporating rocks of various sizes and copious Bronze Age artifacts. The deposit originated as sheet flow, denuding areas higher on the hill and covering the original (yellow ochre) soil upon which the Bronze Age inhabitants lived. The debris is matrix-supported, i.e., structurally supported by a mud matrix. Rocks and artifacts were brought down as sheet flow by heavy rains at a time when little vegetation was present to hold the soil in place. This process implies that the debris flows took place after the abandonment of the settlement, or at least after the slope was cleared of vegetation. The earliest similar phase of soil erosion in Greece during the Holocene—the deposit known as the Pikrodafni alluvium—took place in the Early Bronze Age, by which time agriculture was well established (van Andel and Runnels 1987: 138–153, figs. 9–12). This first anthropogenic occurrence of catastrophic soil erosion was caused by a widespread neglect of the soil on agricultural slopes, which was consequently eroded as sheet flows during heavy rains. A similar process may be responsible for the transport and deposition of Bronze Age material at Vouvopotamos. Long after the abandonment of the settlement, a dark brown to dark reddish brown soil developed gradually within the sheet flows as a function of natural chemical processes such as leaching of minerals to the subsurface.

The debris flow is superimposed on a thick yellow ochre soil upon which the Bronze Age community lived and perhaps farmed. No artifacts or evidence of debris flows were found in this dense, fine-grained soil. This is the natural Holocene soil, which was probably covered with dense vegetation and stable over a very long period of time. Farmers of the Bronze Age would have found it perfectly acceptable for cultivation. The lowest stratum visible in profile is a yellow and whitish calcrete (CaCO_3) horizon of a type common at some depth below the surface in semiarid regions (Birkeland 1984: 138–146).

In the geomorphological reconstruction lie important clues to the forms of subsistence practiced by the Bronze Age inhabitants. Certain characteristics of the deposit indicate that slope clearance for agriculture provides a plausible mechanism for the transport of debris. The main indicator is the prevalence of slope wash over the known extent of the site. This degree of soil loss implies farming rather than other land uses that result in vegetation clearance. Extensive grazing, for example, would eliminate woodland, but not the entire root system holding the soil in place. Furthermore, grazing would most likely produce a patchy erosional effect, rather than the general flow evident on the site. The invasive techniques of agriculture could, on the other hand, have set catastrophic soil loss into motion by pulling up the root system.

Was agriculture feasible on these hills, and what motivation might Bronze Age communities have had for adopting it?

The yellow ochre soil was certainly suitable for growing emmer wheat as a rain-fed or spring-fed crop. In the absence of springs or access to abundant fresh water, dry farming was a risky venture, and the cultivation of large tracts of land was probably necessary to ensure against crop failure by amassing a surplus in bountiful years. I find it likely that cultivation on the slope of the hill at Vouvopotamos was one component of a diversified strategy of subsistence designed to afford the best opportunity of survival. In such a scheme, hillslope agriculture was a seasonal occupation complementing farming of the Acheron floodplain (which probably contributed a larger amount of food), hunting, gathering, and herding.

Floodplain agriculture, as was practiced in Thessaly (along with the cultivation of spring-fed meadows) beginning in Neolithic times, was far superior in its dependability and production to any form of dry farming (Sherratt 1980; van Andel, Gallis, and Toufexis 1994; but see Halstead 2000 for doubts about the prevalence of early floodplain agriculture). The Acheron floodplain beneath Vouvopotamos must always have been swampy or beset by small lakes during spring floods, but as the floodwaters receded in early summer, fertile alluvial silts were exposed and available for cultivation. The plain is a short ten-minute walk from the location of the densest scatter of material on the slope (Figure 4.12). Dry farming on the hillslope might have been practical in the wetter winter months, with harvests scheduled for the spring, when the floodplain was inundated. A comparable winter growth schedule for wheat and barley has been recorded in modern ethnographic contexts in Greece (e.g., in Messenia: Aschenbrenner 1972: fig. 4-2). Other resources of the floodplain included fish and fresh water fauna, swamp plants such as reeds and straw, and mud for building. The settlement was also favorably positioned to take advantage of upland areas for grazing sheep and goats; cattle could be herded on the plain or low slopes.

The demise of the sizable settlement at Vouvopotamos may have been precipitated by a catastrophic event, such as the failure of agriculture or other resources. In any case, the process of formation of the site as it exists at present began shortly after the abandonment of the slopes that had been so thoroughly denuded.

XIROLOPHOS #1: N-14

Nikopolis Project designation: SS94-3
 UTM coordinates: N 43-46-322 E 4-63-181
 Estimated area: 0.24 ha (small)
 Elevation: 44–52 masl
 Visibility: 1 and 10 (i.e., “all or nothing”: 10 on and along road; 1 elsewhere)
 Pottery: 39 (39 K II/III)
 Flaked stone: 14; association with Bronze Age pottery exclusive
 Chronology: BA

A limestone hill rising from the Acheron plain east of the village of Stavrochorio was designated Xirolophos #1 (Figure 4.2) to distinguish it from a hill of the same name northwest of Stavrochorio (Xirolophos #2). Much of Xirolophos #1 was free of modern habitation, but was overgrown in most places by dense maquis vegetation: Kermes oak, asphaka, acanthus, and other low bushes, small trees, and grasses. Visibility and movement about the hill were consequently quite difficult. The best opportunity for investigation was provided by a dirt and gravel access road leading from the foot of the hill to a telecommunications building on its apex. Near the building, it was noted that Bronze Age sherds were eroding from the road cutting. In a survey unit following the road, almost 100 sherds (many too small to collect), exclusively of K II/III type, were discovered in a dark brown to dark reddish brown soil that was exposed at a thickness of less than 10 cm to around 1 m. The scarps extended for approximately 90 m along the road. One fragment of an impressed band decoration was collected, but most of the sherds were smaller than thumbnail size. Several flint flakes of probable Bronze Age type were mixed with pottery in the soil.

Other survey units were walked in rather poor visibility conditions, and one or two Bronze Age sherds turned up. Since only a narrow swath of the soil that produced Bronze Age material was exposed, it is impossible to estimate the extent of the activity on the hill, and the nature of the artifacts say little about the site's function.

XIROLOPHOS #2: N-15

Nikopolis Project designation: SS94-4
 UTM coordinates: N 43-46-560 E 4-62-426
 Estimated area: 4.40 ha (large)
 Elevation: 15–38 masl
 Visibility: 7–9; mean 8
 Pottery: 131 (123 K II/III; 3 PM; 5 O/R)
 Flaked stone: 52; association with Bronze Age pottery high
 Chronology: BA; post-MH; EIA

A second limestone hill northwest of Stavrochorio bearing the name Xirolophos was designated Xirolophos #2. This small rise (peak 38 masl) was relatively open, especially on its lower reaches. Survey units placed around the hill yielded rich evidence of repeated occupation from prehistory to modern times. Unusually dense artifact concentrations were recognized in the northwestern quarter, where the Bronze Age was most strongly represented. Hundreds of Bronze Age sherds were counted, although only 131 were collected. The sherds come predominantly from K II/III vases, although three are thought to be identifiable as imitations of Minyan ware, and five are in Orange-red fabric. No Mycenaean pottery was recognized, a fact that may have chronological implications (such as abandonment in LH III; but see the discussion of the discovery and recognition of Mycenaean pottery in Chapter 5), or shed light on the function of the settlement or its

access to exotic goods. A high percentage of the sherds derive from heavy storage jars or cooking pots. The flint flakes were found mainly at the same location as the densest concentration of Bronze Age pottery, although artifacts of other periods were present as well. The flakes were of many colors, and some showed light retouch or other modification in the manner of the suspected Bronze Age industry.

The sheer volume of Bronze Age material and the likely domestic function of much of the pottery point to the existence of a sedentary settlement on Xirolophos #2. The resource base in the surrounding plain included fresh water, fish and fresh-water fauna, wetland flora and fauna, and fertile alluvial land for cultivation during a part of the year. This and other settlements may have been subservient to larger communities like Kastri at various times, depending on political and economic conditions.

2. Ayios Thomas Peninsula (Figure 4.14)

AYIA TRIADA: Isolated Findspot IF-4

Nikopolis Project designation: T94-55
 UTM coordinates: N 43-15-262 E 4-82-197
 Elevation: 38 masl
 Visibility: 4–7; mean 6
 Pottery: 1 (1 K II/III)
 Flaked stone: 17
 Chronology: (BA)

In the north-central Ayios Thomas peninsula, a small church of Ayia Triada is surrounded by expansive olive groves and agricultural fields in which cucumbers, watermelons, and other food crops are grown. Survey conditions were generally favorable throughout the vicinity. In a survey unit southeast of the church, a single sherd of K II type was recovered. A moderate number of flint flakes, all debris, was collected from the same area.

AYIOS MINAS: Isolated Findspot IF-5

Nikopolis Project designation: W94-72
 UTM coordinates: N 43-14-412 E 4-80-553
 Elevation: 13 masl
 Visibility: 3–6; mean 4
 Pottery: 2 (2 K II/III)
 Flaked stone: 4
 Chronology: (BA)

In a sparse scatter of material northeast of the Late Antique church of Ayios Minas on the southern coast of the Ayios Thomas peninsula, two sherds of K II/III type were found. Four undiagnostic flint flakes were also collected.

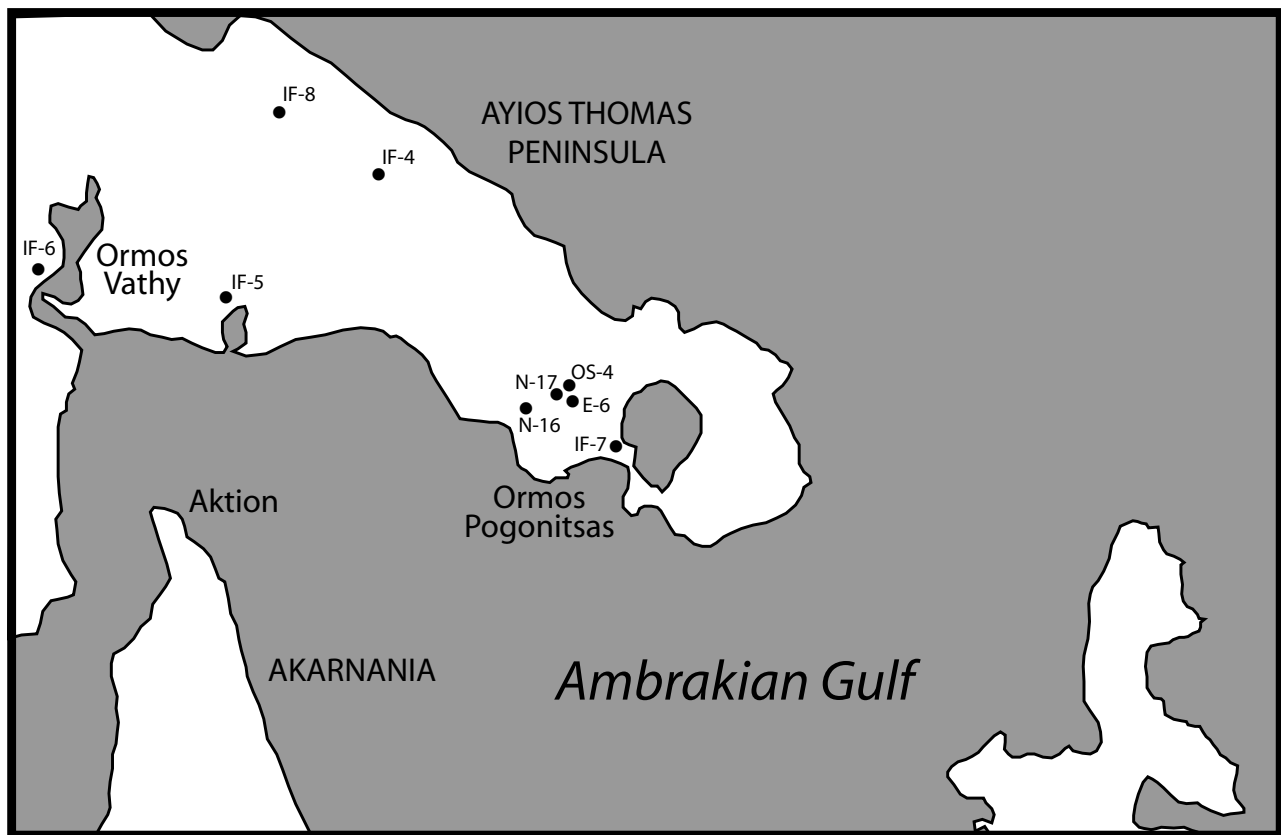


Figure 4.14 Map of the Ayios Thomas peninsula, showing locations of Bronze Age sites.

LATOMEION: Site N-16

Nikopolis Project designation: SS93-11
 UTM coordinates: N 43-13-193 E 4-82-938
 Estimated area: 0.006 ha (small)
 Elevation: 34 masl
 Visibility: 10
 Pottery: 24 (24 K II/III)
 Flaked stone: 2; association with Bronze Age pottery exclusive
 Other evidence: animal bones (8); bits of daub; a plaster-like substance
 Chronology: BA

This small site is located about 100 meters from the shore at a small inlet of the Ambrakian Gulf west of Pogonitsa Bay and east of the hill known as Latomeion for the active quarry on its western face. The site consists of a narrow swath of material—little more than 8 m × 7 m—exposed on a dirt and gravel road that had been bulldozed to provide access to the sea. Because the road follows a shallow ravine that empties into the Gulf, a strong possibility exists that the artifacts washed down from above, although it is noted that the pottery recovered from the spot is exclusively prehistoric.

Two dozen sherds, all of Bronze Age coarseware, were picked up along with two undiagnostic flint flakes, eight animal bones, small chunks of daub, and bits of a plaster-like substance. The bones have not been examined by an

expert, but they seem to belong to small animals, including birds and possibly sheep or goat. If this material belongs together, and it is far from certain that it does, a small encampment where meals were consumed might be imagined. In a wider perspective, these remains are part of a strong Bronze Age signature at the eastern end of the Ayios Thomas peninsula. From this location, the Ambrakian Gulf is a one-minute walk, and the protected bay or harbor at Pogonitsa is 10–15 minutes on foot. The Skaphidaki site, with its cist grave and Mycenaean pottery, is less than a kilometer away.

This scatter provided an interesting opportunity to observe the ephemeral nature of many surface concentrations. The discovery of the site was made by the sheer luck that a vehicle had kicked up several fragments of pottery. At the time I made a mental note that the next rain might wash away all trace of the scatter, and in fact, I had great difficulty in finding it a month later. It seemed to me a useful illustration of the constant reworking of deposits in these sorts of erosional landscapes, and a demonstration of the need for understanding geomorphological processes when considering site contexts.

ORMOS VATHY: Isolated Findspot IF-6

Nikopolis Project designation: numerous survey units at a major historical settlement (SS 93-8)
 UTM coordinates: artifacts scattered about southern part

of site near N 43-19-643 E 4-78-826

Elevation: 3–6 masl

Visibility: 6–10; mean 8

Pottery: 4 (4 K II/III)

Flaked stone: 615

Chronology: BA

A small amount of coarse Bronze Age pottery (K II/III) was recovered in three survey units at the site of the main harbor of the city of Nikopolis on the Ambrakian Gulf. The volume of historical material was so heavy that the search for prehistoric pottery was difficult, and other sherds may exist that have not been recognized as prehistoric. In Roman times, the Ormos Vathy penetrated far inland (hence the name refers to this feature, not the depth of the water, which must always have been shallow), making an ideally protected harbor with long shorelines on which warehouses and other installations could be placed. Perhaps Bronze Age inhabitants also used Ormos Vathy as a harbor for boats plying the Ambrakian Gulf, as seems certainly to have been the case at the eastern end of the peninsula. There is ample evidence that the waterway was of great interest to prehistoric people: on terraces above the level of the bay, large quantities of flint stone tools and debris of Middle Paleolithic and possibly Bronze Age date (and perhaps of other periods as well) were exposed in plowed fields. These toolmakers must have been attracted by watering animals and marine or estuarine resources.

POGONITSA: Isolated Findspot IF-7

Nikopolis Project designation: SS93-34

UTM coordinates: N 43-12-631 E 4-83-818

Elevation: 3 masl

Visibility: 10

Pottery: 1 (K II/III)

Flaked stone: none

Chronology: BA

The roundish Lake Pogonitsa lies at the eastern end of the Ayios Thomas peninsula, separated from the Ambrakian Gulf by a narrow strip of land, probably a man-made causeway, through which channels have been cut for a fish hatchery. The lake must have been a bay open to the sea in ancient times; Hammond (1967: 48) marks the location as a harbor, and records the report of local fishermen that large amphoras have been recovered from the water. At the base of a small promontory at the mouth of the bay (which would have been an island in the absence of the causeway), well-preserved artifacts were noted in piles of heaped soil. By inquiry it was learned that the material had been excavated some years earlier in the construction of a canal for the fish hatchery. The artifacts were primarily of Roman date, but a few Classical/Hellenistic sherds and one certain Bronze Age sherd were recovered as well. It is probable that the artifacts were disturbed from stratigraphic contexts. The Bronze Age sherd is unsurprising in light of considerable evidence for local activity and for outside contacts.

Skaphidaki Cist Grave: Site E-6

Nikopolis Project designation: none

Chronology: MH–LH

Elevation: 72 masl (from estimated location)

References: Io. Andreou 1987; Il. Andreou 1994: 243, figs. 32–34

In 1987, a cist grave was unearthed during road building operations at the location “Aloni,” near the eastern end of the Ayios Thomas peninsula. The grave probably contained two burials. Among the furnishings were two kantharoi and a beaked jug, two bronze pins with biconical heads possibly of early Mycenaean type, eight bronze rings, and assorted other ceramic and bronze objects. The excavators favor a MH date for the grave; I believe a date within the Shaft Grave era (MH III–LH I/II) is most likely, on the basis of the vessel shapes and the bronze pins.

SKAPHIDAKI: Site N-17

Nikopolis Project designation: SS93-20

UTM coordinates: N 43-13-400 E 4-82-859

Estimated area: 0.013 ha (small)

Elevation: 54 masl

Visibility: 10

Pottery: 66 (30 K II/III; 5 PM; 6 O/R; 25 Myc)

Flaked stone: 1; association with Bronze Age pottery exclusive

Other evidence: middens of marine shell; fire-cracked rock; radiocarbon determinations

Chronology: BA; post-MH; LH III; EIA–IA

A deeply buried stratigraphic profile detailing a long history of human occupation was discovered in 1993 at the intersection of a field access road and the new asphalt road connecting Ayios Thomas village with a major quarry on the east side of Lake Pogonitsa (Figure 4.15). The exposed scarp is located just 75 meters northwest of the site of the cist grave discovered in 1987. Two main exposures, one visible to a depth of almost two meters and the other to more than three meters, document a complex sequence of occupation and natural deposition spanning a millennium or more.

The eastern, deeper exposure provided a wealth of artifacts and information about human settlement over time. The profile shows a series of anthropogenic layers, including shell middens, a charcoal layer, and artifact-bearing horizons, interrupted by episodes of natural deposition of sands and river gravels and overlain by a thick deposit of sterile fine sand in the historical period (Figure 4.16). Many artifacts, including potsherds, flint flakes, and fire-cracked rock were distributed in the anthropogenic deposits. Two main concentrations of pottery were noted: at a greater depth just above a basal shell lens, sherds of K II/III and pseudo-Minyan ware appeared with an unusual abundance of painted and unpainted Mycenaean pottery. Above this, after a succession of natural sand and gravel layers, the

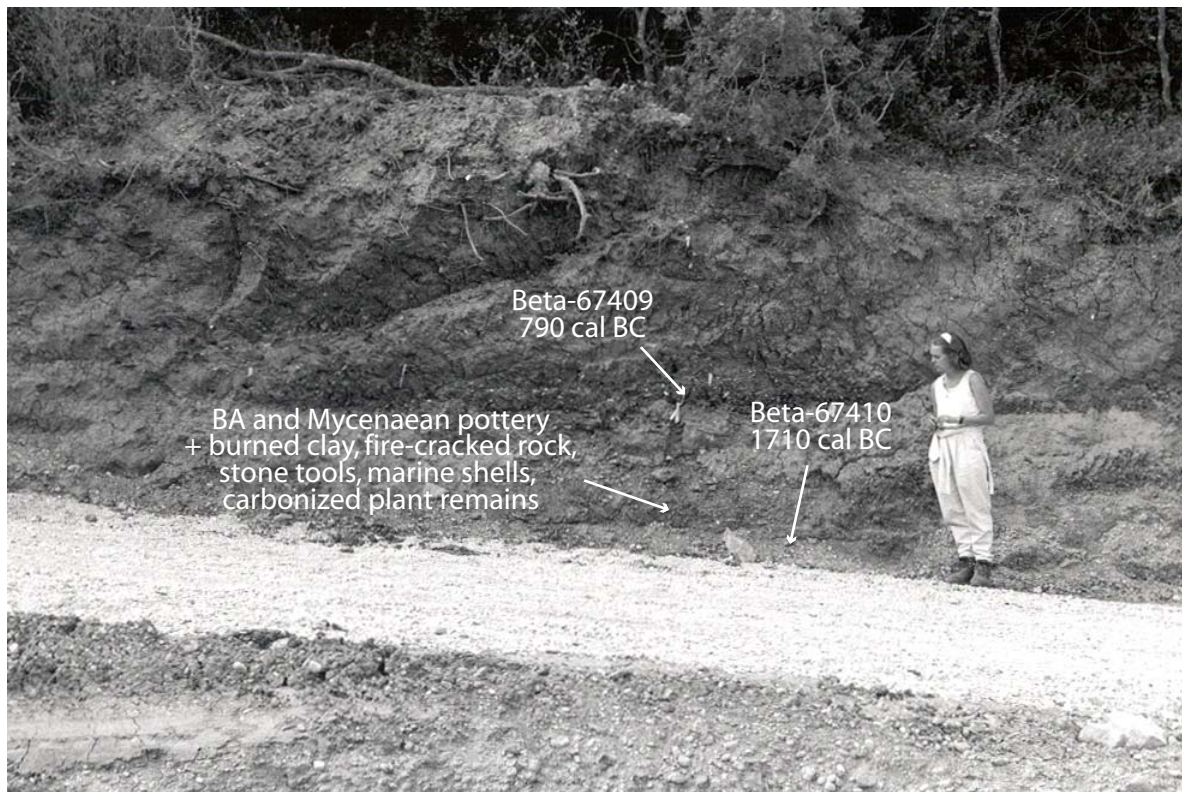


Figure 4.15 Skaphidaki: view of stratified profile, showing locations of Bronze Age deposit and radiocarbon samples. Photograph courtesy Nikopolis Project.

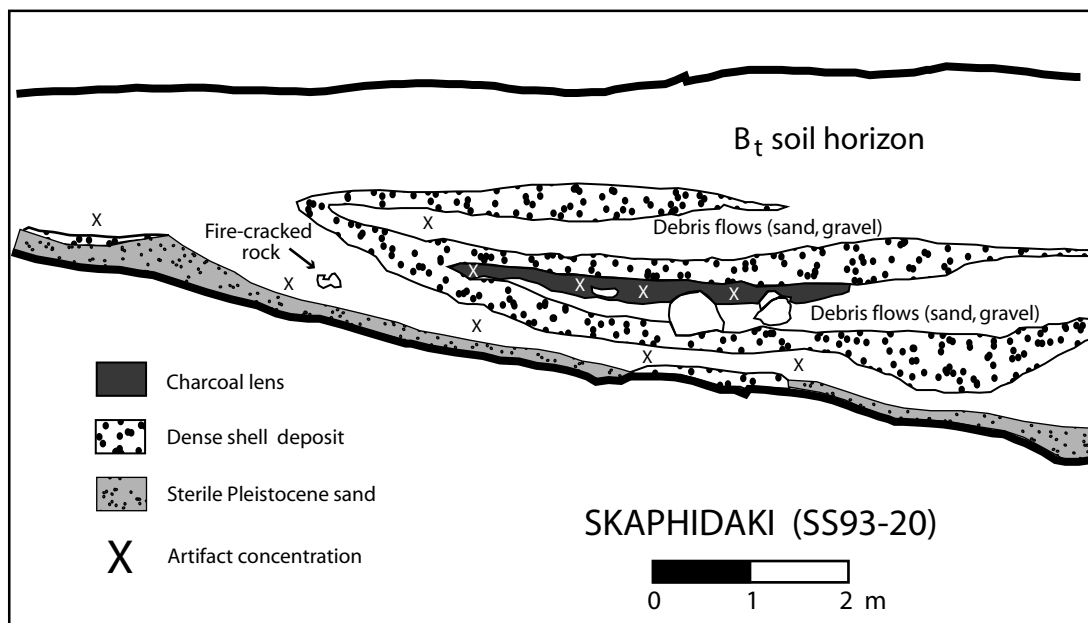


Figure 4.16 Skaphidaki: simplified profile drawing, showing main deposits and artifact concentrations. Adapted from field drawing by Tj. van Andel, C. Runnels, and P. Murray.

second main artifact concentration localized in and around a charcoal lens produced sherds of coarse handmade ware, Orange-red ware, and painted sherds that probably belong to Geometric times. Two samples were taken from the scarp for radiocarbon dating: one from the basal shell layer directly underneath the concentration of Mycenaean and other prehistoric pottery; and the second directly from the charcoal lens. The lower sample returned a date of $3,430 \pm 70$ BP (Beta-67410), calibrated to approximately 1710 B.C.; the charcoal sample returned a date of $2,590 \pm 120$ BP (Beta-67409), calibrated to approximately 790 B.C (Pearson and Stuiver 1993).

The date of 1710 B.C. from the shell layer provides a terminus post quem for the establishment of the settlement in which Mycenaean ware was deposited, and accords well with the chronological framework established by the furnishings of the nearby cist grave. This profile may well form a portion of the debris of the settlement in which the individuals buried 75 meters to the southeast lived. The date for the charcoal layer also conforms well to the artifacts found in and around that feature. Sherds of orange-red type display characteristics of the second phase of Bouboist-type pottery in Epirus, common in the 9th and subsequent centuries in the cemetery at Vitsa. The monochrome painted sherds find comparanda in imported vessels at Vitsa and other sites in Epirus. This particular phase of settlement at Skaphidaki thus may be contemporary with 8th-century Vitsa, at a time of the initial arrival of imported Geometric vessels from Corinth (Vokotopoulou 1986: 276–281, figs. 6, 22).

The unusual abundance of Mycenaean sherds, accounting for almost half of those recovered in the surface survey, is fascinating if not completely unexpected. Our models of contact with the Mycenaean world must now be adjusted to accommodate the circulation of Mycenaean fine ware in a near-coastal settlement context on the Ambrakian Gulf. Likely scenarios of interaction are suggested by the proximity of the Aitolokarnanian mainland to the south and the Ionian Islands beyond the mouth of the Gulf to the west. The sherds appear to span LH IIIA to LH IIIC chronologically, and include sherds from kylikes, goblets, jars, and other shapes (see Chapter 5). The sources of imported Mycenaean pottery are not known, although there is some evidence to suggest an earlier phase in which ties with Aitolokarnania were strong, and closer parallels with the Ionian Islands or the western Peloponnese nearer the end of the Bronze Age.

Marine and fresh-water shelled animals made up a portion of the diet of the inhabitants of the Skaphidaki site. At this spot, they made their campfires to cook meals in large, coarse pots, and drank from finer table vessels. The profile shows that a river flowed by the site in later prehistory, periodically burying it in gravels and alluvium. Humans returned to the site many times over the centuries, until finally it was buried and never occupied again.

SKAPHIDAKI: Off-site Scatter OS-4

Nikopolis Project designation: T93-20
UTM coordinates: N 43-13-616 E 4-83-295
Elevation: 48–60 masl
Visibility: 3–9; mean 6
Pottery: 2 (2 K II/III)
Flaked stone: 45
Chronology: (BA)

In a survey unit walked approximately 120 meters east of the Skaphidaki cist grave (and thus some 200 meters east of the Skaphidaki habitation site), two sherds of K II/III type were collected. These may be associated with the settlement and/or the burials. The lithics have not been studied.

VASSOULA: Isolated Findspot IF-8

Nikopolis Project designation: W94-55
UTM coordinates: N 43-15-742 E 4-80-791
Elevation: 48–84 masl
Visibility: 1–7; mean 3
Pottery: 1 (1 K II/III)
Flaked stone: 22
Chronology: (BA)

A prehistoric sherd was picked up on a large, grassy hillslope near the highest point in the northeastern sector of the Ayios Thomas peninsula. The walkover extended from a ridge at 84 masl, downslope to the northern east–west road that traverses the peninsula. The upper half of the survey unit consisted of an open field of high grasses adjacent to an elaborate new villa; the lower half to the road was occupied by abandoned or poorly maintained olive groves. From the villa, there is a spectacular view of the northern and southern coasts of the peninsula, with Nikopolis and the Mazoma lagoon to the north and Ormos Vathy and the Ambrakian Gulf to the south. The modern road at the bottom of the survey unit, which continues east through the village of Neochori, marks one of the easier east–west routes across the peninsula. The inability to find more cultural material of all periods on the slope is somewhat puzzling, although minimal ground visibility accounts for some of the problem, and burial of cultural deposits by soil transport down the slope may play a role.

3. Louros River Drainage (Figure 4.1)

Asprochaliko: Site E-7

Nikopolis Project designation: not investigated by Nikopolis Project
Chronology: BA
References: Dakaris 1971a: 29–30

BRONZE AGE SITE CATALOGUE AND COMMENTARY

Dakaris reported the discovery of stone tools of Bronze Age type at the primarily Paleolithic rock shelter known as Asprochaliko along the Preveza-Ioannina highway north of the village of Ayios Georgios.

ELI: Isolated Findspot IF-9

Nikopolis Project designation: SS92-19
UTM coordinates: N 43-35-304 E 4-82-001
Elevation: 27 masl
Visibility: 8
Pottery: none
Flaked stone: 307
Chronology: (Neolithic–EBA II)

The findspot “Eli” consists of three small, low mounds raised slightly above the level of the marshy periphery of the present channel of the Louros River, due south of the village of Stephani. Geologist Panayiotis Paschos of the Preveza office of IGME has formulated a geomorphological history for this location, which I relate only in outline (further detail is available in Jing and Rapp 2003). In the remote past the Ambrakian Gulf reached as far inland as Stephani, and a large river flowed into it through the gorge west of the village. Over time, as the river dropped its sediment into the Gulf, a wide delta formed in the region of Eli. Later, the Gulf receded, and the mounds that once were tiny islands became dry. In more recent times, the Louros River cut into the land south of Eli, perhaps flooding it to the level of the plain and causing the mounds to become islands once again. In the present day, the wetland surrounding the mounds has been drained for agricultural land. The timing of these developments as they relate to later prehistory, worked out from a series of geological cores, suggests that the mounds may have been situated on a wetland coastal front in the Neolithic period, and subsequently existed as small islands or were completely submerged in the Ambrakian Gulf in the Bronze Age, with maximum marine transgression ca. 4500 BP (Jing and Rapp 2003: fig. 5.21a, b).

A large artifact sample was collected from a freshly excavated canal and its spill, cut through red Pleistocene fan deposits and younger soils on one of the mounds. All of the artifacts were lithics; most of these were flint flakes, but a few flaked tools were recognized as well. One of the tools is a sickle element on a pressure blade, probably of Neolithic–EBA II date by comparison with known Greek examples (Karimali 1993). A medial segment of the blade is preserved, with irregular retouch and silica gloss. It is possible that this sickle element was deposited at Eli before the maximum marine transgression separated the mounds from the mainland. Many of the flakes may belong to the Bronze Age as well, but the assemblage has not yet received close study. In the adjacent mound, burned earth features were noted, but in the absence of associated cultural material, no chronological information could be gleaned

from them. The Paleolithic inhabitants of this region exploited the gulf and delta environments, and scant evidence suggests that this interest continued into the Bronze Age.

Kokkinopilos: Site E-8

Nikopolis Project designation: SS91-3; W93-34
Location: Louros River valley
UTM coordinates: N 43-45-487 E 4-86-646
Estimated area: 0.36 ha (medium)
Elevation: 145 masl
Visibility: 4
Pottery: 3 (3 K II/III)
Flaked stone: 4
Chronology: BA
References: Dakaris 1971a: 29

Dakaris reported the discovery of stone tools dating to the Bronze Age at this important Paleolithic site. In an unsystematic scouting walkover in 1993, I picked up three sherds of Bronze Age coarseware and four flint flakes in a patch of trees and soil remaining at the highest point of the site. The sherds are of coarse K II fabric, and the flakes are unlike the Middle Paleolithic pieces that litter the site, but conform to the general characteristics of the proposed Bronze Age industry. Most of the Bronze Age strata at Kokkinopilos have surely been eroded away.

Louros: Site E-9

Nikopolis Project designation: not investigated by Nikopolis Project
Chronology: BA (?)
References: Dakaris 1971a: 29

Stone tools possibly of Bronze Age date from the vicinity of the village of Louros were reported by Dakaris. No precise details concerning form or provenience were provided.

Philippiada: Site E-10

Nikopolis Project designation: not investigated by Nikopolis Project
Chronology: EIA
References: Andreou 1994: 242

Over a wide area of the lower hillslopes in the vicinity of the Kaloyirou Bridge near the town of Philippiada, traces of many structures, several of them circular in plan, were discovered. Handles and other sherds from Early Iron Age vessels (11th–10th century B.C.) were collected from the site. No description of the sherds or the criteria for dating them were reported.

Salaora: Site E-11

Nikopolis Project designation: none

Chronology: BA (?)

References: Hammond 1967: 318 and n. 2

Two obsidian blades in the Finlay collection of the British School in Athens are said to have come from Salaora. Doubts about their provenience had already arisen by the first decade of the 20th century. According to his own records, Finlay had two lots of material from Salaora, totaling 20 cores, 31 flakes, and some “flints.” Throughout the Bronze Age, Salaora was an island in the Ambrakian Gulf (Jing and Rapp 2003).

Stephani: Site E-12

Nikopolis Project designation: not investigated by Nikopolis Project

Chronology: LH

References: Andreou 1994: 243, fig. 31

A hoard of bronze artifacts including eight double axes, three spear points, and two fragments of a bronze bow said to have been found in the rugged hills west of the village of Stephani was turned over to the Archaeological Museum in Ioannina. The foundations of numerous structures and several examples of piled stone were reported near the findspot. The double axes are of the well-known Late Helladic type; these particular specimens are compared to those found at Katamachi, northeast of Paramythia.

4. Central Zone (Figure 4.1)**AYIA ODIGITRIA: Isolated Findspot IF-10**

Nikopolis Project designation: SS92-26; T92-57

UTM coordinates: N 43-29-806 E 4-75-978

Elevation: 64 masl

Visibility: 6

Pottery: none

Flaked stone: 1 (sickle element with silica gloss)

Chronology: MBA–LBA

A later Bronze Age sickle element (NST-89) was found in a survey unit below the ruined 18th-century church of Ayia Odigitria approximately 3 km northeast of the village of Archangelos. It is a complete rectangular element on a grayish brown flint flake with double truncation, backing, and a retouched denticulated edge with silica gloss. No Bronze Age pottery was found in the area, but discoveries of Bronze Age sickle elements at Ayia Odigitria and nearby Grammeno suggest that these may have been subsistence areas, perhaps agricultural fields, exploited by local communities.

The elevation upon which the remains of the church stand affords an expansive view to the east over the flat terrain

to the Ambrakian Gulf. West of the church, the ground rises to 80 masl, and from this vantage point there is a precipitous drop to the west and a good view of the Hellenistic city of Kassope, nestled in a saddle beneath the crest of Mt. Zalongo.

GRAMMENO: Isolated Findspot IF-11

Nikopolis Project designation: SS92-6

UTM coordinates: N 43-28-641 E 4-75-981

Elevation: 23–32 masl

Visibility: 7–9; mean 8

Pottery: 1 (1 K II/III)

Flaked stone: 98

Chronology: (BA) (MBA–LBA)

An important site of the Hellenistic and Roman periods was exposed by the plowing of an agricultural field northeast of the village of Archangelos. Among the thousands of historical artifacts blanketing a field not much larger than a hectare, a sherd of K II/III type and two sickle elements (NST 93-18, NST 93-19) were identified. One of the sickle elements was made on a backed and truncated brown flake with denticulation and silica gloss; the other on a double convex end scraper with silica gloss on an unretouched edge.

KASTROSYKIA: Isolated Findspot IF-12

Nikopolis Project designation: none

UTM Coordinates: N 43-27-167 E 4-70-879 (estimated)

Elevation: 16 masl

Pottery: 3 (3 K II/III)

Flaked stone: none reported

Chronology: BA

During a scouting visit, three sherds of K II/III type were collected from a flattish terrace across the modern coastal highway from Kastrosyikia Cape. The terrace overlooks the wide, deep Paliourias Remma (ravine), an ancient streambed that emptied into the sea just south of the cape. The sherds are coarse but well made, exhibiting red exterior surfaces and smoothed black interior surfaces, a common pattern in the local Bronze Age coarseware (see Chapter 5).

OROPOS: Isolated Findspot IF-14

Nikopolis Project designations: SS93-25, SS93-26

UTM coordinates: N 43-33-337 E 4-76-129

Elevation: 52 masl

Visibility: 7

Pottery: 8 (8 K II/III)

Flaked stone: 1

Chronology: BA

BRONZE AGE SITE CATALOGUE AND COMMENTARY

Bronze Age pottery was discovered at two nearly adjacent standing monuments less than a kilometer west-southwest of Neos Oropos village. Several sherds, including a partial wall profile with a complete strap handle attached, were collected inside and around the remains of a Hellenistic watchtower on the lower contours of a relatively steep ridge. A short distance to the east, at the base of the slope, similar coarseware sherds were found among the ruins of an ancient aqueduct. All of the pottery is of K II/III type.

Oropos-Barleta Hill: Site E-13

Nikopolis Project designation: not investigated by Nikopolis Project
Chronology: BA (?)
References: Andreou 1994: 242

The discovery of surface traces of ancient structures on the slopes of Barleta hill, approximately 2 km northwest of Oropos, was reported in a recent conference paper. Also recovered from the site were pottery sherds said to be of Late Neolithic date, many flint flakes, part of a green serpentine axe, and several other stone tools. There is no mention of how the pottery came to be assigned a Neolithic date.

Oropos-Vlachokalyva: Site E-14

Nikopolis Project designation: not investigated by Nikopolis Project
Chronology: BA
References: Andreou 1994: 242, fig. 30

From the locality Vlachokalyva, approximately 3 km southwest of Oropos, comes a nearly complete slotted axe. Foundations of circular structures were also noted, and several piles of arranged stones were interpreted as tumuli of LH III times. The dating of the putative tumuli is not discussed.

Paliorophoros: Site E-15

Nikopolis Project designation: none
Chronology: BA
References: Dakaris 1971a: 29, n. 93; Andreou 1994: 242, fig. 29

At the locality "Kokkini," northwest of Paliorophoros, prehistoric sherds and part of an axe were collected in 1982. Dakaris had earlier noted the discovery of unpublished K II sherds in the vicinity of Paliorophoros.

CHEIMADIO: Site N-18

Nikopolis Project designation: SS94-18
UTM coordinates: N 43-37-271 E 4-65-451

Estimated area: 0.01 ha (small)
Elevation: 400 masl
Visibility: 5
Pottery: 10 (10 K II/III)
Flaked stone: 7
Chronology: BA

Substantial remains of prehistoric and historical occupation are found in and around Cheimadio, the site of a large upland polje (i.e., a large-scale limestone solution depression) in the mountainous interior at the western limit of the Zalango range (Figure 4.17). A large town of the Hellenistic period flourished at the polje's northeastern corner, and the rich bottomland is farmed by the modern residents, as it must have been in antiquity. On the eastern side of the polje, at the base of the steep limestone rim, a scatter of Bronze Age pottery and flint flakes was centered on a modern cistern. The sherds are all of K II/III type, but exhibit an interesting range of variability in terms of fabric colors and treatments. The lithics are unretouched flint flakes that may be of Bronze Age type, but they have not been closely examined. A variety of resources would have been available in the polje, which was in ancient times alternately a seasonal lake and swamp/marsh habitat. The modest Bronze Age remains probably represent repeated or permanent occupation by communities wishing to take advantage of the dependable year-round resource availability offered by the polje.

GALATAS: Site N-19

Nikopolis Project designation: SS92-13
UTM coordinates: N 43-48-280 E 4-83-229
Estimated area: 2.24 ha (large)
Elevation: 306 masl
Visibility: 9
Pottery: 21 (16 K II/III; 3 PM; 2 Myc)
Flaked stone: quantity not specified; association with Bronze Age pottery high
Other evidence: daub with reed impressions; radiocarbon determination
Chronology: BA, post-MH, (LH III), LH IIIA

The village of Galatas is located in the eastern foothills of the Thesprotiko valley, northeast of the town of Thesprotiko. The late prehistoric site lies at just over 300 masl, about 30 minutes' walk up the rather steep slope along a switchback path and some 2 km from the valley floor. Surrounding a flat sinkhole feature, known as the "football field" for its shape, a network of dirt and gravel roads was recently cut into the limestone and its thin soil cover. A few meters north of the level field, the remains of a prehistoric structure were discovered in the roadbed and the cutting, consisting of stone foundations, possibly round in plan; and large pieces of daub with reed impressions. In association with the structure, many large sherds of handmade vessels and flaked-stone artifacts were collected from the road cut. Most of the sherds are of typical K II/III fabric, but two sherds of light buff fabric are probably



Figure 4.17 View of the drained polje at Cheimadio. Photograph courtesy Nikopolis Project.

provincial Mycenaean, similar to those from Vouvopotamos. C. Runnels (personal communication, 1994) notes that the flaked stone assemblage is unlike local Paleolithic industries, finding comparanda rather with the lithics at Ephyra and Vouvopotamos. Another concentration of material was located in scarps next to a modern pumping station 100 meters north of the level field. These scarps reveal stratified cultural material with dense deposits of prehistoric pottery and lithics. A sample of pottery sherds was taken for the collection of the Archaeological Museum in Ioannina during a revisit by K. Zachos and T. Tartaron in 1993.

A radiocarbon sample of charcoal taken from among the prehistoric hut remains returned a date of 3180 ± 60 BP (Beta 59373), calibrated to ca. 1400 B.C., or LH IIIA in the Greek chronology (Pearson and Stuiver 1993). The radiocarbon determination finds support in the Mycenaean pottery found in this context, and also in a sickle element of MBA–LBA type (NST 92-5). The element is on a brown cortical flake with left and right inverse denticulation and heavy silica gloss (50%).

The settlement was situated on a terrace at the base of a steep mountain face, perhaps close to springs that are known to be plentiful in this area. The density of artifacts and traces of domiciles indicate a community, perhaps seasonal and perhaps sedentary, of good size. The inhabitants gathered grasses or engaged in agriculture, as suggested by the sickle element with heavy gloss. Evidence for outside contacts is provided by a small amount of Mycenaean pottery, imported from a provincial center. Although the location is somewhat isolated from major

corridors of communication, locally available resources in the form of water and food were apparently sufficient to sustain a small settlement. Repeated occupations are evident in stratified material near the modern pumping station, but the time scale of the sequence is not known.

Kassope: Site E-16

Nikopolis Project designation: none

Elevation: 560 masl (Agora area)–585 masl (temple platform)

Chronology: BA, LH III

References: Hammond 1967: 303 and n. 2; Dakaris 1971a: 29, n.93; Hoepfner and Schwandner 1986; Gravani 1986: 123, n. 212

Hammond found sherds of Bronze Age coarseware at the site of the (Aphrodite?) temple outside the walls of the ancient city, near the modern monastery. Prehistoric sherds, including a few fragments of imported Mycenaean kylikes (Gravani 1986: 123, n. 212), and stone tools were reported from several contexts in the joint German-Greek excavations.

Rizovouni: Site E-17; Isolated Findspot IF-16

Nikopolis Project designation: W94-87 (SS91-6)

UTM coordinates: N 43-42-310 E 4-84-563

Elevation: 150 masl

Visibility: 2–7; mean 4

Pottery: 1 (1 K II/III)

Flaked stone: 33

Chronology: (BA)

References: Dakaris 1971a: 27; Andreou 1994: 242

Southeast of the town of Thesprotiko, a fortified citadel of the Hellenistic period has been identified as Batiai, one of the Elean colonies. On the slopes northwest of the acropolis, sherds from handmade vessels, including handles and rims from kantharoi, were found and assigned to the Early Iron Age (11th–10th centuries B.C.). A Nikopolis Project survey unit inside the circuit wall produced a sherd of K II/III type, and flint flakes plausibly of Bronze Age date were scattered in many tracts. It has been speculated that a major route connecting Dodona with the south passed through the Thesprotiko valley from the earliest times of the oracle's prominence, and similar ease of movement in the Bronze Age would account for signs of activity at Rizovouni. A nearby lake (Lake Mavri) and copious springs provided necessary resources in ancient times.

Thesprotiko: Site E-18

Nikopolis Project designation: not investigated by Nikopolis Project

Chronology: BA (?), EIA

References: Dakaris 1971a: 29, fig. 48; Andreou 1994: 242–243

The foundations of five circular structures near the Ayios Athanasios church are described by Dakaris, who considers them the huts of a prehistoric village (Figure 4.18). The foundations use a single width of flat stones between 0.5 and 0.7 meters thick, forming structures approximately six meters in external diameter. None of the foundations is a complete circle; rather, they were used to form level floors on the sloping terrain to receive superstructures of wattle and daub. Prehistoric sherds and a fragment of a bored stone celt were recovered from inside the foundations.

Andreou reports Bronze Age remains at two locations around the town of Thesprotiko. At the locality Kibadania, approximately 2 km southeast of Thesprotiko, foundations of structures were noted, along with sherds and stone arrangements marking prehistoric tumuli. Cist graves were also discovered on the surface of a hillslope near the entrance to town southwest of the athletic center, together with coarse sherds thought to date to the Early Iron Age.

5. Southern Zone (Figure 4.1)

MICHALITSI: Isolated Findspot IF-13

Nikopolis Project designation: numerous survey units at a major historical settlement

UTM coordinates: artifacts scattered about several survey units; approximate center at N 43-23-058 E 4-77-362

Pottery: 16 (16 K II/III)

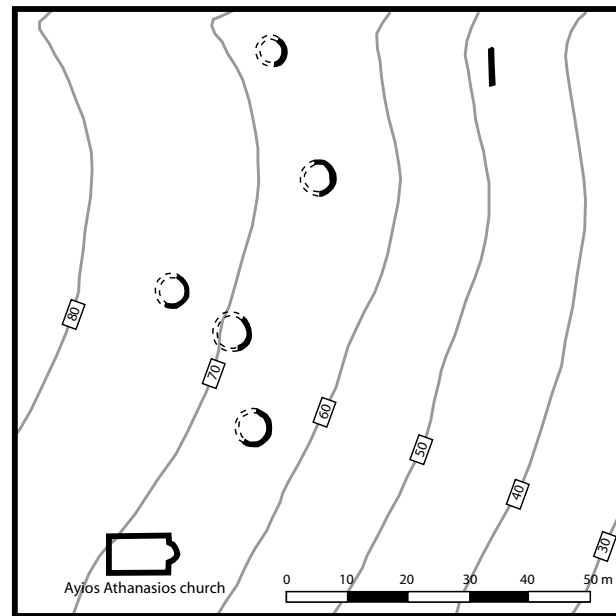


Figure 4.18 Thesprotiko: stone foundations of circular huts thought to be of Bronze Age date. After Dakaris 1971a.

Visibility: entire range

Flaked stone: 47

Chronology: BA

Almost 60 survey units were superimposed on the area of this major Classical–Hellenistic town spread over the hills north-northeast of Nikopolis. In several of the units, one or two sherds of Bronze Age coarseware were picked up. Additional prehistoric sherds, and perhaps examples of the other Bronze Age wares, might emerge from a meticulous examination of all of the many collection lots. Flaked stone was relatively rare among the finds, and no chronological information is yet available for the lithics. The highest hills of Michalitsi offered views of both the Ionian and Ambrakian coasts of the peninsula, which is narrow at this point.

PREVEZA-ALONAKI BEACH: Isolated Findspot IF-15

Nikopolis Project designation: SS94-22

UTM coordinates: N 43-12-006 E 4-76-128

Elevation: 4 masl

Visibility: 9

Pottery: 3 (3 K II/III)

Flaked stone: unreported

Chronology: BA

On the Ionian shoreline at the northern limit of suburban Preveza, three sherds of K II/III type were found on a deflated fossil dune surface estimated on geological grounds to be about 7,000 years old. The hard surface has been exposed as younger, softer sand surfaces have been removed by wind and recent bulldozing. The Bronze Age sherds probably originated in a now-lost upper sediment.

6. Northwest: Parga Area (Figure 4.1)**Ayia Kyriaki: Site E-19**

Nikopolis Project designation: not investigated by Nikopolis Project

Chronology: LH IIIB–C

References: Vokotopoulou 1968: 293, pl. 237; Dakaris 1968c: 293, pl. 237α, 1972a: 64

A bronze spear point was found in the vicinity of the village of Ayia Kyriaki, approximately 1 km away from the Mycenaean tholos tomb at Kiperi. The spear point is similar to the one that was turned over to Dakaris and said to have come from the tholos.

Kiperi: Site E-20

Nikopolis Project designation: SS95-2

Location: hill overlooking Lichnos Bay near Parga

UTM coordinates: N 43-49-225 E 4-50-555

Estimated area: 1.00 ha (medium)

Elevation: 150 masl

Visibility: 1–4; mean 2

Pottery: 38 (36 K II/III; 2 O/R)

Flaked stone: 32; association with Bronze Age pottery high

Chronology: BA, LH IIIA–C, (EIA)

References: Dakaris 1960b: 123–127, pl. 92, 1972a: 64; Papadopoulos 1981b

A Mycenaean tholos tomb (Figure 4.19) and evidence of a possibly walled settlement surrounding it are spread over the slope of a steep hillside facing the Ionian Sea above Lichnos Bay between Ayia Kyriaki and Parga. The tomb and its significance are discussed in Chapter 8; my comments in this entry will focus on the surface remains and their context.

The tholos was placed on a relatively flat terrace on the otherwise steep mountainside.⁵ Evidence for a settlement associated with the tholos tomb consists of foundations of round structures, foundations of square and rectangular structures, sections of a well-built wall running north–south several meters from the tomb, and a scatter of prehistoric pottery on the terrace and the slopes beneath it. None of the foundations is closely dated, with the result that although some of them likely do belong to a Late Bronze Age settlement, the fact cannot be demonstrated. Some of them are enveloped by underbrush so thick that major efforts at clearance would be required to expose them. Generally, they are the foundations of small rooms or structures with diameters of less than five meters, and consist of a single thickness of limestone blocks. Some of the foundations are fieldstones, while others have been roughly cut. The wall near the tholos, running north to south across the contours (i.e., up and down the slope) is more easily identifiable as a Bronze Age construction. The masonry is typical of the cyclopean technique: large,

roughly hewn boulders fit together without mortar, and small stones placed in the interstices among them. The wall is thick—1.3 meters as measured in two places—and care was taken to make flat, handsome faces. The preserved height of the wall, up to 1.2 meters, does not represent the full original height. The segment preserved astride the tomb is some 20 meters or more in length; no turns, openings, or other features were discerned before the wall disappeared in rubble and impenetrable vegetation. A comprehensive study of the wall and other architectural features that are spatially associated with the tholos tomb on this terrace would yield the crucial data needed to better understand the social context of this unique burial, but it would entail the commitment of resources to a major project.

Somewhat better control over the extent of the prehistoric remains was gained from surface survey investigation in 1993, and a site revisit in 1995. Two walkovers walked in difficult conditions of mobility and visibility yielded substantial quantities of prehistoric coarseware sherds on the east and west of the tomb, and in olive groves on the slopes just below the terrace. The concentration was heaviest to the west and southwest, on the side of the tomb where the architectural traces are located. The sherds belong to K II/III class, with the exception of two sherds of Orange-red ware that suggest that the settlement persisted into the Iron Age. No sherds of Mycenaean type were found on the surface. The flint flakes that were collected have not yet been examined. Winter rains of 1993 and 1994 made it impossible to add much surface information during our revisit in summer 1995. It appears likely that the main focus of settlement was on the terrace west of the tholos tomb. The sherds scattered in the groves below the terrace were probably transported downslope over time. The Cyclopean wall may therefore enclose the settlement on the terrace, or function as a temenos wall marking the tomb precinct as hallowed ground.

Perhaps the most useful information obtained in our revisit in 1995 concerned the setting of the site and the views the location afforded. By clearing the slope of vegetation, the inhabitants would have gained unobstructed views of the bays of Lichnos and Parga, as well as the islands of Kerkyra, Paxoi, and Antipaxoi. Furthermore, from a spot southwest of the tholos tomb, the district of the ancient bay at the mouth of the Acheron River, including the ridge on which Ephyra stood, is in plain view (Figure 4.20). This fact underscores the potentially intimate connections among the coastal settlements on this segment of the Ionian seacoast in the Late Bronze Age. The possibility of ties between these two settlements, and other settlements such as Kastriza, is explored in Chapter 9.

Discussion*Conditions of site discovery*

With notable exceptions, Bronze Age sites in the Preveza nomos are shallowly buried under the modern surface at a



Figure 4.19 View of the Mycenaean tholos tomb at Kiperi near Parga. Photograph courtesy Nikopolis Project.

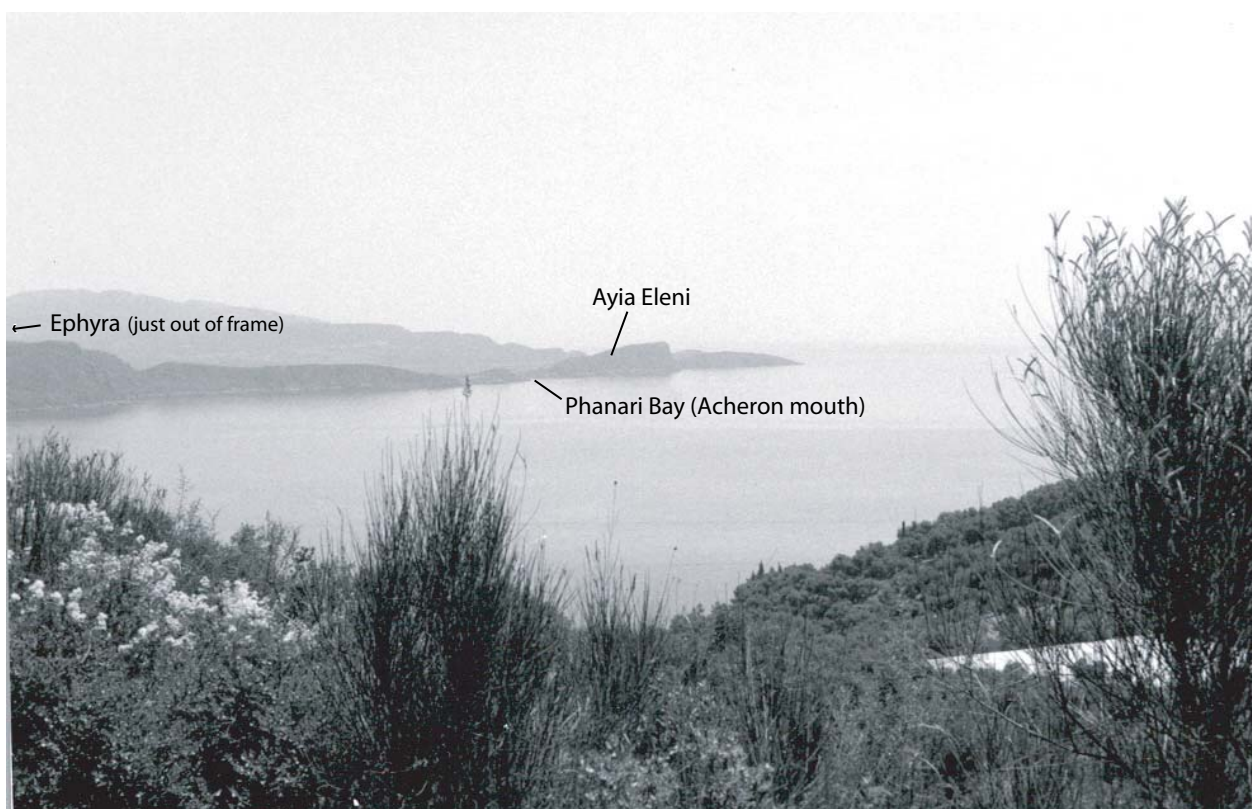


Figure 4.20 View to the Acheron mouth and surrounding ridges from near the Kiperi tholos, facing southeast. Photograph courtesy Nikopolis Project.

depth of one meter or less. They occur in a matrix of dark brown or dark reddish brown soil, and are exposed for the most part by recent plowing, bulldozing, and road construction. The discovery of such sites is therefore often fortuitous, and ironically relies on the very activities that perpetrate widespread destruction of archaeological resources.

The number of loci of Bronze Age material discovered by the Nikopolis Project and by the Archaeological Service in recent years (Andreou 1994) gives a clear indication that sites and other artifact concentrations are thick on the ground in southwestern Epirus. The most productive strategy of site discovery would seem to be a persistent walking of the landscape over a period of years, seeking deposits exposed by plowing, land improvement schemes, road building, and natural processes. Similar strategies employed by dedicated archaeologists on artifact-rich landscapes such as the Thessalian plains have yielded spectacular results. One would expect a more modest harvest in southern Epirus, but a much fuller documentation of the settlement system is a worthy objective.

A model of site formation in the lower Acheron valley

On the basis of numerous observations in the field, and closer study of the geomorphological context of selected sites (e.g., Koumasaki, Vouvopotamos; see entries above), it is possible to suggest a generalized model of the formation of Bronze Age sites in the lower Acheron drainage, the primary focus of this study.

Late prehistoric sites were founded on a thick, stable Holocene soil like the yellow ochre soil exposed at Vouvopotamos. In some cases, the topsoil was stripped away and carried downslope following the abandonment of cleared agricultural slopes. At Vouvopotamos, soil, rocks, and artifacts were transported down denuded slopes in the form of sheet flows. In other cases, natural erosional processes moved abandoned artifacts gradually down the sides of hills, depositing them near the base of the slope and mixing artifacts of multiple periods. It is sometimes possible to distinguish the two processes by examining exposed soil profiles, and by seeking evidence of rolling and smoothing on sherds and other artifacts. In some instances, the source locations of the artifacts can be traced in low-density scatters of material extending up the slope (e.g., Pountas East). Another class of sites, particularly those founded on level terraces and small limestone rises in the plain, was buried more or less *in situ*. Erosion is an important agent in the formation of the Epirote landscape, even in the comparatively low-lying regions of southwestern Epirus, and must therefore be considered in site reconstruction, particularly when dealing with surface material.

After the abandonment of the Bronze Age sites, a soil began to form, incorporating artifacts, limestone boulders and pebbles, and other debris littering the surface. The soil

acquired a dark brown or dark reddish-brown hue as a consequence of the leaching of iron-bearing minerals, local temperature and climate, and other factors (Birkeland 1984: 296–298). The formation of this soil is incomplete, however, and erosional episodes have caused deflation and mixing of prehistoric and historical material at sites that were repeatedly occupied (e.g., Koumasaki).

The soil in which Bronze Age sites are found appears to cover most of the region, so a strategy aimed at pinpointing exposures of specific soils or sediments would be impractical. Just such a strategy paid off handsomely in the search for Paleolithic sites, which occur in a high percentage of exposed Pleistocene red beds.

Distribution of sites

A measure of bias is present in all archaeological data, in spite of the best efforts to eliminate it in research designs, field methods, and data analyses. With respect to the disparity between the total archaeological record of the Bronze Age and the documentation of it produced by the surface survey, certain biases can be identified:

1. *Research design and execution.* An attempt was made to place survey units at representative elevations and environmental zones. In practice, our efforts were often limited by the accessibility of locations and their distance from the home base. The highest elevations and locations most difficult of access are substantially underrepresented. Locations more than an hour's drive from the home base near Kastrosykia were generally not investigated. Fortunately, most of the nomos was well within reach.

2. *Natural processes that inhibit or prevent site detection.* Site loss of unknown magnitude can be attributed to erosion and deposition. Some concentrations of material have been lost to erosion, although scattered pieces may be discovered in secondary deposits. A more easily conceived bias is the loss of sites buried under alluvium in the floodplains of the major rivers, most importantly for this study, the Acheron. The wide floodplain of the lower Acheron is mantled in meters of alluvium, as the Nikopolis Project's program of geological coring has demonstrated (Besonen, Rapp, and Jing 2003). On the other hand, the results also indicate that in the Bronze Age, much of the plain was wetland throughout the year, and thus more important for resource exploitation than for permanent occupation. The alluvial and colluvial processes of the dynamic lower Acheron system are the most significant agents of natural changes in the landscape since the Bronze Age.

One result is that low hills rising above the plains and the lower slopes surrounding them are overrepresented in the sample, but on several lines of evidence I will argue that these habitats share several advantages that made them appealing and likely to be favored in the Bronze Age as they were at other times in the past and as they are today. A full examination of site location is presented in Chapter 9.

The findspots that were discovered by surface survey teams yielded a wealth of artifactual material of Bronze Age date. A detailed examination of the Bronze Age artifacts of Epirus in Chapters 5 (ceramics) and 6 (lithics and other material) provides insights into chronology, extra-regional contacts, and the range of human activity on the landscape.

Endnotes

1. It is exceedingly unlikely that fired bricks or tiles were used in Epirus in the Bronze Age. Fired tiles were used at Lerna, but exclusively in EH II. Fired tiles similar to those from Lerna, and likely of identical date, are reported as surface finds in the southern Argolid (Pullen 1995).

2. My thinking on this matter greatly benefited from intensive discussions on the site with Nikopolis Project colleagues. J. Wiseman, C. Runnels, and Tj. van Andel in particular provided me with much food for thought, but I must bear the responsibility for the identification. Some of the data recorded for the wall are taken from notes made by J. Wiseman during a visit to the site on 20 June 1995.

3. This site and others of later date in the vicinity were shown to Stavros Zabetas and me by Kanallakion resident Nikos Pantas on a hot but enjoyable afternoon in July 1993.

4. I revisited the site in 1994 with Tj. van Andel, who shared many observations and interpretations. I am grateful to him and to C. Runnels and P. Murray, who accompanied us and contributed many insightful ideas.

5. The site is today isolated and almost impossible to find in the heavy vegetation unless one possesses prior knowledge of its exact location. S. Zabetas and I were led to the tomb in 1993 by young local resident Nikos Vasilikou; in 1995, Nikos' younger brother Andreas accompanied our revisit team and pointed out architectural features that we had not suspected earlier. Their companionship and patience with our many queries are deeply appreciated.

Chapter 5: Artifact Analysis: Ceramics

I: Prehistoric Pottery Types of Bronze Age Epirus

Sherds from pottery vessels form a ubiquitous class of artifact recovered from most excavated and surficial archaeological sites, by virtue of their resistance to destruction once fired. With the passage of time, vessels may break into small fragments and suffer varying degrees of wear, but the sherds can last for millennia. The preservation of ceramic artifacts is conditioned chiefly by the hardness of the original fired fabric, and by the post-depositional environment. The corpus of Epirote Bronze Age pottery is dominated by poorly fired coarse ware that has not fared well over the course of three to five millennia. The low temperature of the firing and the damp, erosional soil matrix in which the pottery was deposited result in severe disintegration. Pottery removed from the surface or from buried contexts tends to be extremely friable, and fragmented into small pieces. Whole vessels are normally found only in burials. Even the harder-fired wares, such as imported Mycenaean and matt-painted pottery, are found in a worn state, many sherds having lost the traces of original slips and painted decorations.

From the meager remains we must attempt to find clues to the technology used to manufacture the pottery, the shapes and functions of the whole vessels from which the sherds came, and the related wares in Greece and elsewhere that may help to establish chronological frameworks and yield information on networks of trade and communication. Examination of ceramics may also reveal information on social and economic organization, e.g., identifying the mode and locus of pottery production may provide information on the way that communities structured economic activity.

The repertoire of local Bronze Age wares was apparently limited by an intensely conservative tradition. They were first described by Evangelidis (1935), who excavated coarse pottery in the sanctuary area at Dodona, and sought to establish a connection with the coarse fabrics of Bronze Age Macedonia and Thessaly. Some years later, a taxonomy of the locally made pottery was developed on the basis of several prehistoric fabric types recognized in the excavations at Kastritsa in 1951 and 1952 (Dakaris 1951: 177–183, 1952). Dakaris divided the handmade pottery from Kastritsa into four categories: I–IV, also known as K (“Kastritsa”) I–IV, with Mycenaean and imitation Mycenaean (both handmade and wheelmade) constituting separate categories. This taxonomy continues to frame the discussion of prehistoric pottery in Epirus, but more recent discoveries and research necessitate fundamental changes in Dakaris’ categories. In the discussion that follows, I examine each of the original categories in turn, making adjustments and placing the different fabrics in the context of current knowledge on Bronze Age ceramics in Epirus and surrounding areas. K I, primarily intended to

encompass Neolithic pottery, is found to have no viability as a ceramic category. K II and K III are collapsed into a single spectrum embracing the semi-coarse and coarse domestic pottery used throughout the Bronze Age in Epirus. A subset of K II/III inspired by Minyan shapes is identified. K IV, comprising matt-painted and related fine wares of the end of the Late Bronze Age and Early Iron Age, is modified to eliminate Dakaris’ variant K IVb, and expanded to accommodate two phases of painted fine ware, as well as unpainted fine to semi-coarse vessels of related chronology and technology. Finally, I examine the evidence for Mycenaean and related fabrics.

Category I (K I)

K I is represented by a small number of sherds with incised or punctate decoration that Dakaris took to be of Neolithic date on stylistic grounds, drawing comparisons to sherds from Neolithic Sesklo and Dimini in Thessaly, and Choirospilia on Lefkas (Dakaris 1951: 177–178). Similar decoration is known in the later Early Neolithic pottery from Sidari on Kerkyra. The early stages of the Neolithic in Epirus are perhaps represented at the sites of Asphaka and Kastritsa near Ioannina (Douzougli 1996a, 1996b; Douzougli and Zachos 2002: 114–121). A radiocarbon date of 7380 ± 240 BP exists for a cultural horizon containing pottery at Asphaka. The Kastritsa pottery includes three sherds that have been compared to the “impresso ware” that is found in a broad swath of the Adriatic region and as far inland as Thessaly in the later Early Neolithic and into the Middle Neolithic (Douzougli 1996b: 117; Douzougli and Zachos 2002: 118). Some burnished and painted wares from Gouves find parallels in Late Neolithic matt-painted traditions of Aitolokarnania and southern Greece, but are also similar to painted pottery of Maliq I in southern Albania (Douzougli 1996b: 117; Douzougli and Zachos 2002: 121–124). Yet securely dated Neolithic pottery in Epirus is so scarce, the sequence so poorly defined, and the modes of decoration so widespread in southern Europe in time and space that K I does not represent a homogeneous or useful class of artifacts.

A stratified, securely dated Final Neolithic (and possibly partially Early Bronze Age) settlement with genuine interpretive potential has come to light recently at Doliana in northern Epirus (Douzougli and Zachos 1994: 14–17, pl. 3–5; Douzougli 1996a, 1996b). This site, discussed below, holds vital information on ceramic traditions and subsistence practices at the transition between the Neolithic and Bronze Age in inland Epirus.

Category II (K II): Coarse-Fabric Domestic Ware

This broad category encompasses the range of everyday coarse ware of the Bronze Age, which served simple utilitarian functions of storage, food preparation, and

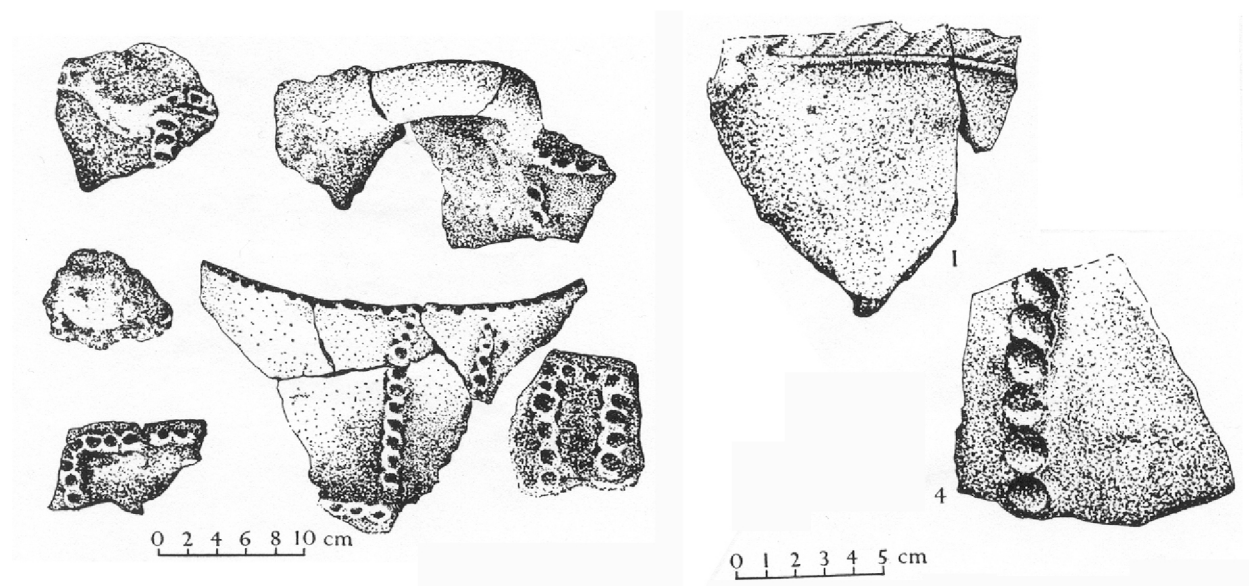


Figure 5.1 Examples of plastic decoration on K II pottery. After Hammond 1967.

consumption of food and drink. Sherds and vessels of this category comprise the vast majority of all ceramics known from later prehistoric Epirus.

Physical appearance

K II is exclusively handmade, typically of coarse fabric, heavy, and crude in appearance. The fabric is characterized by poor firing, which contributes to the friable state in which sherds of this category are often found, and copious inclusions, primarily rock fragments and mineral particles. Vessel walls are typically thick.

Vessels of K II type are not slipped, painted, or burnished. The only embellishment found on them is plastic decoration, which occurs rather commonly in two forms: impressed (and less commonly, incised) bands or cordons (Figure 5.1); and applied, amorphous clay lumps or “pellets.” The impressions are usually circular or oval in shape, fashioned either with the tip of a finger or thumb, or with a rounded object, such as the end of a reed or stick; their execution may be careful or haphazard. They may be impressed onto a band of excess clay affixed to the vessel surface, or simply onto the surface of the vessel itself. The band or chain of impressions is most often found extended horizontally around the vessel just beneath the rim, across the belly, or at the attachment point of the handles. It is apparent from the form and placement of the impressed bands that their purpose was more decorative than structural, although an occasional horizontal band placed at the point of maximum diameter may have served a structural purpose as well. In certain examples, impressed vertical bands are also placed on the body, intersecting horizontal bands and thus dividing the body into a number of panels (Figure 5.1). Several variations on this theme exist more rarely. At times, the band is a narrow, horizontal coil of applied clay that is raised well off the surface, but

not impressed or otherwise decorated. This coil is sometimes undulating rather than straight. Somewhat more common than these variations is the incised band. The incisions are typically straight or slightly curved lines pressed into an applied clay band; they were sometimes evidently made with a fingernail. On some examples, the impressions or incisions are tightly spaced and uniform, giving an appearance rather like that of a telephone cord. Another common feature is the placement of clay lumps (also referred to as “warts,” “pellets,” or “mammiiform lumps”), in no particular pattern, about the body of the vessel. They are more often positioned on the lower half of the vessel, and may be large or small, widely spaced or densely packed (Evangelidis 1935: 204). This decoration is found alone and in combination with impressed cordons, particularly on larger coarse vessels. A variation of the amorphous lump is the well-formed applied disk.

Horizontal, finger-impressed cordons are a common decorative feature on late prehistoric pottery throughout southern Europe, but the frequency of their use and the combination of cordons and lumps appear to be unique to Epirus (Evangelidis 1935: 205; Wardle 1977: 187–189). Wardle (1977: 187) noted close comparanda only from Ithaka in a coarse jar from Polis Cave, possibly of Late Bronze Age date, and in some sherds decorated with clay lumps at Treis Langades in an LH III context. Similar decoration on “necked jars” has been identified on Kephallenia, also assigned to LH III (Souyoudzoglou-Haywood 1999: 75–76, fig. 62c; Wardle 1972: fig. 119), and in Albania, such decoration is known from the beginning of the EBA at Maliq IIIa. The earliest parallels to this ornament in Greece belong to the Chalcolithic Attic-Kephala culture, and to the middle and upper levels of the Chalcolithic Rachmani phase at Pefkakia (Douzougli and Zachos 2002: 127). Closer parallels are found in southern and central Greece in Early Helladic I (ca. 3100/3000–

2650 B.C.) and especially in Early Helladic II (ca. 2650–2200/2150 B.C.) contexts. In the southern Argolid, “impressed taenia band” ornament is not uncommon in EH I, particularly on incurving bowls; in EH II, bands and impressions are found abundantly on incurving bowls, deep bowls, large bowls and basins, and some pithoi (Pullen 1995: 19–39). At Lerna, impressed band decoration of this sort corresponds to Rutter’s (1995: 636–639) plastic and impressed variant 1, which, while most common in EH II at Lerna and elsewhere, continued through EH III (Lerna IV: ca. 2200/2150–2000). In spite of general similarities in ornament, it would be unwise to link K II with plastic and impressed pottery of the Early Helladic period elsewhere in Greece. The parallels in decoration are hardly exact, and other attributes of forming, firing, and surface treatment are for the most part dissimilar. One would need also to explain the absence in Epirus of the other variants of plastic decoration that appear in the Early Helladic repertoire, e.g., diagonally and densely impressed or incised bands (Rutter’s [1995: 636] variant 2), or multiple, densely packed horizontal and/or vertical bands with impressions (Rutter’s [1995: 636] variant 3).

The repertoire of K II shapes known to us is limited (Hammond 1967: 300–301, figs. 11–16; Wardle 1972: 210–216, 1977: 182). Most vessels are open, with two basic shapes most common: an open, often pithoid jar with vertical handles and outward-curving to sharply everted rim, frequently decorated with finger-impressed cordons and clay lumps (e.g., Wardle 1977: fig. 11.634); and a medium to large conical bowl, similarly decorated, with heavy loop handles emanating from the rim or on the upper portion of the body (e.g., Wardle 1977: fig. 11.616–624).¹ The vertical handles are round, elliptical, or strap in section, while horizontal handles tend to be elliptical or round, or elliptical with flattened top surfaces. Wishbone handles are common in the Bronze Age coarseware excavated by Evangelides at Dodona (1935: 198–201), but absent in the prehistoric deposit excavated by Dakaris at the same site (Wardle 1972: 215). There may be a chronological implication to this pattern, but the mixed deposits at Dodona prevent firm conclusions. Wishbone handles are common on Mottled Grey Ware in the MBA on Kerkyra, where they continue into the LBA, and in the S and F Graves on Lefkas, which span the MBA and beginning of the LBA. Lugs are far more rare than handles, but come in a variety of forms (Hammond 1967: 300). Nearly all K II vessels have flat bases or flat to slightly round bottoms (e.g., Hammond 1967: fig. 13).

Forming and firing characteristics

Examination of the extant sherds reveals that rudimentary clay preparation, sloppy forming, and poor firing account for the coarseness and crude appearance of K II pottery. All K II vessels were handmade: large storage jars were probably built using the coil method, although conclusive evidence is lacking (Wardle 1972: 208), and the smaller bowls and other vessels by pinching. Most K II vessels

have a gritty texture owing to a ubiquity of inclusions, large and small, visible in section and often protruding from the surfaces. These inclusions may have been present in the raw clay, or added as temper to improve strength and stability in the forming and firing process. The presence of inclusions of mixed type and size, within single vessels and across the corpus of K II pottery, suggests there was no systematic effort to refine raw clays, or to use a homogeneous material as temper. Wardle (1972: 208, 1977: 182) concluded that the clay was unrefined or roughly purified before use, and further that the addition of temper was required, particularly in larger, thicker-walled vessels, to enhance their chances of survival in an uncontrolled firing environment. Although this hypothesis appears reasonable based on macroscopic inspection of the finished product, prospection for local clays, which has only recently been undertaken in Epirus,² will provide a better estimate of the natural constituents of the raw clay.

The crude, irregular form of much of the K II assemblage makes it tempting to imagine that Bronze Age households lacked knowledge of levigation, settling, and other procedures for refining clay. Yet some measure of refinement seems a natural outgrowth of learning the minimal skills of enhancing the plasticity and workability of the clay. Evidence that clays could be and in fact were refined comes from the smaller, finer vessels that belong to the same spectrum of domestic ware (see discussion of K III below). The intended function of K II pottery may better explain its rudimentary treatment. The typical utilitarian shapes indicate that K II was not intended for display, trade, or ritual use. Utility rather than regularity or beauty of form seems to have been the primary objective. From this perspective, we might expect that only the energy necessary to produce a serviceable vessel was expended. Processes of clay refinement by settling or levigation can be difficult and time consuming, and as a result, producers of utilitarian ware may have sought alternative solutions to the problem of fashioning a clay body with adequate plasticity and workability, but which would also survive firing (and in the case of cooking pots repeated heating) without cracking or exploding. Prehistoric Epirote potters undoubtedly observed that thick-walled vessels fashioned from untreated clay were particularly weak and susceptible to cracking and incomplete firing. A partial solution available to them was the addition of temper to prevent the vessel wall from cracking as it expanded in the heat of the fire (coarse-textured vessels are less susceptible to thermal shock). If clays of reasonable plasticity could be mined locally, they may have been shaped for utilitarian ware with little refinement except the removal of the coarsest rock fragments and organic particles, and the addition of temper, such as crushed rock or sand, for strength.

Clues to the nature of pottery firing in the Bronze Age are detectable in the surface color and the appearance of the ceramic fabric in section. The evidence they provide points to open firings under conditions in which temperature and atmosphere were poorly controlled, resulting in incomplete

and nonuniform firing. In section, most K II sherds display a series of firing layers or zones, easily distinguished by their color variation. The surface tends to be rather thin, and ranges in color through the browns and reds. An underlying layer of wholly or partially oxidized fabric may be thick or thin, giving way to a thick core zone of unoxidized clay that is gray to black in color. This “sandwich effect” is a hallmark of the incomplete firings achieved in low-temperature, open fires. The color zonation comes about primarily because the temperature and the duration of time at which maximum temperature is maintained are not sufficient to fire the inner portions of the vessel completely; this phenomenon is naturally especially prevalent in thick-walled vessels. The inner zone thus affected normally takes on a dark gray to black color because the firing has failed to oxidize organic material in the clay body. Complete oxidation is also impeded in open firings by airborne combustion products, wind, and the fuel that often covers the pile of pots (Rice 1987: 335).

Such low-temperature, open-air firings, which achieve maximum temperatures in the range of 600–850° C, are characterized by an extremely rapid rise in temperature (Rice 1987: 156–157). Maximum temperature is attained shortly after the fuel covering the vessels is consumed; subsequently, the temperature decreases rapidly at first, and then more slowly. The maximum temperature attained, the time required to attain it, and the duration of burning at high temperature are determined in large measure by the qualities and applications of the fuel: its combustion behavior, size, quantity, and positioning. Some woods, for example, burn more slowly than others, and some burn hotter than others (Rice 1987: 157). The visual evidence in sections of K II ware points to rapid firings at relatively low temperatures.

The surfaces of K II vessels often feature a mottling of black and red regions that is likely an unintentional effect of variations in the availability of oxygen to the vessel during firing. Stacking or placing pots against each other may result in dark smears at zones of contact, which are sealed off from oxygen. Localized color variations known as “fire clouds” are caused by fuel resting on the vessel surface (Orton, Tyers, and Vince 1993: 223). Color variations can even be caused by windy conditions that vary the supply of oxygen to ceramic surfaces. These attributes are inherent to simple, open firing, and should not be confused with intentional mottling for aesthetic purposes. Postdepositional conditions may cause discolorations that can be mistaken for fire clouds or traces of cooking use such as soot or burning.

Although similar forming and firing techniques were employed throughout Epirus to manufacture Bronze Age coarse ware, there is a lack of uniformity in the appearance of the final product. Shapes, although rendered in a limited number of basic forms, are asymmetrical and idiosyncratic in execution. The colors of the interior and exterior surfaces range widely, encompassing hues from yellow to brown, through red to gray and black. Inclusions appear in

manifold combinations of abundance, size, and composition. The degree of oxidation and completeness of firing are widely inconsistent. This range of attribute variability among potters making use of a similar level of technology, notable even within single sites, attests to a household mode of coarse ware production. There is neither evidence of standardization in the parameters of forming, firing, and decoration, nor any sign of mass production that would suggest craft specialization or the existence of workshops. Rather, the manufacture of utilitarian pottery was a widely disseminated, though modest technology that was practiced by households or other small social units. The entire production process—from prospection for suitable clays to firing—must have taken place near the locus of intended use. It is difficult to imagine that K II pottery, consisting in large measure of sizable, heavy containers, was traded over distances or routinely transported from place to place. The simplicity of the technology permitted households to produce utility vessels as needed to satisfy requirements for storage, cooking, and consumption.

Origin and chronology

Early observers found comparanda for K II ceramics in the coarse Neolithic and Bronze Age fabrics of Macedonia and Thessaly (Evangelidis 1935: 198–205, 208–212; Hammond 1967: 297–307), Albania (Hammond 1967: 292, 303), the Ionian Islands (Sordinas 1969), eastern Italy (Vokotopoulou 1969b: 190), and central Europe (Vokotopoulou 1969b: 190). Comparisons were drawn primarily on the basis of similar plastic decoration, i.e., impressed and incised cordons and applied pellets, or certain morphological similarities, such as handle types or the shapes of entire vessels. Pioneering scholars, faced with a scarcity of comparanda, were overly impressed with general similarities in shapes and decorative elements that were widely distributed over a broad swath of southern and central Europe. We now know that some elements of these simple design features are present in local coarse ware at nearly every Bronze Age site in northern Greece, and in various prehistoric periods almost everywhere in Europe (Wardle 1977: 188). Their frequency is just as likely related to equivalence of function, or to simple, universal concepts of ornamentation, as to contact or migration, and therefore similar features undoubtedly emerged independently in many places.

Generally, the closest comparanda in form and decoration are found in the “Red Ware” that Sordinas (1969) defined on Kerkyra, and in comparable fabrics in the Ionian Islands. The corpus of Red Ware contains similar vessel shapes, including large pithoi, smaller jars, bowls, and cups. These vessels are coarse, handmade, and fired to reddish surface colors with dark firing cores. They are decorated with plastic coils and cordons, some finger-impressed and fewer carrying fingernail impressions; and isolated pellets. Similar pottery is found on several Ionian islands, including Ithaka, Kephallenia, and Lefkas (Souyoudzoglou-Haywood 1999: 11).

The appearance of K II pottery in Epirus was thought by some to reflect movements of pastoral populations from Macedonia through Albania and Epirus to the Ionian Islands, and ethnic affinities were postulated on tribal lines (Evangelidis 1935: 210–212; Hammond 1967: 297–299). Others envisioned a southward and eastward diffusion of people bearing this pottery tradition in the Adriatic region (Sordinas 1969; Vokotopoulou 1969b: 190). This use of artifacts as cultural markers recalls traditional diffusionist reasoning, in which artifact types, design elements, etc., were identified with particular cultural groups or populations. The appearance of these artifacts or attributes outside their “natural homeland” was deemed evidence of a movement of people from the point of origin to the area of appearance. Stated another way, the intrusive appearance of a new artifact type or attribute in a given area was viewed as a change in population effected by immigration or invasion. Moreover, the putative migrations were linked with quasi-historical episodes such as the incursion of Indo-European tribes at the end of the third millennium (Hammond 1931/2; Dakaris 1972a: 51–54). The idea of a massive incursion of peoples from the north around 2000 B.C. has fallen out of favor, however, as archaeological investigation has revealed a truly complex and nonuniform picture of the timing and magnitude of changes once thought to be more or less synchronous and universal (see, e.g., Forsén 1992; Rutter 1993: 763–781). Even if a general ingress of newcomers could be authenticated and dated, this information would not necessarily link K II pottery with the new population.

Initial estimates of the introduction of category K II in Epirus ranged from the beginning of the Bronze Age (Dakaris 1952: 369; Papadopoulos 1976: 281–282, 318), to sometime around 2000 B.C. (Hammond 1967: 304–307), depending on the chosen region of origin. An Early Bronze Age date for some of this pottery may be suggested by the presence of Red Ware in the R-Graves on Lefkas, which date to Early Helladic II–III (Souyoudzoglou-Haywood 1999: 11). The timing of its abandonment was similarly fluid: it was once believed, based on the presence of K II sherds together with those of Classical times at Dodona, that the use of identical coarse vessels persisted uninterrupted until the 5th century B.C. (Dakaris 1952: 369 and n. 1), until it was realized that this was a mixed deposit. Recent excavations in Epirus, however, provide points of reference from which a general chronology of K II may soon emerge.

The full publication of the cemeteries at Vitsa in northern Epirus (Vokotopoulou 1986), which range in date from the mid-9th century to the 4th century B.C., contributes valuable data indicating that pottery of K II type had gone out of use by the middle of the 9th century B.C., if not earlier. Not a single K II-type vessel was deposited in any of the graves at Vitsa, although abundant sherds, many decorated with incised or impressed bands, were recovered in the fill of the Classical graves and stratigraphically at the depth of the Geometric graves (Vokotopoulou 1986: 355). The association of K II sherd material with Classical

burials is unquestionably the result of later graves being dug into earlier levels, but the strength of the association of K II vessels with the Geometric period is less certain. It may very well be that “pithoi, pithoid jars, and pail-like vessels of domestic use” (Vokotopoulou 1986: 355), similar in shape and surface treatment to K II pottery, continued to be used into Geometric times. A potentially important clue is Vokotopoulou’s (1986: 355) note that the core and surface colors are identical in these sherds, which would be unusual for an assemblage of coarse ware of Bronze Age date. This observation indicates that some or all of these domestic vessels are not genuine K II, chronologically or technologically. Instead, they must be later forms that preserve formal characteristics, but reflect improvements in ceramic technology, gained through exposure to Mycenaean, Early Iron Age matt-painted, and other pottery, that had filtered down to local producers of large utilitarian vessels in the post-Bronze Age era. On the other hand, it is conceivable that the sherds of K II type derive from a small Bronze Age settlement or activity area that was subsequently disturbed. The protohistoric settlement at Vitsa, as yet unpublished, ought to provide confirmation of one of these alternatives.

The pottery assemblage from the recently discovered and excavated site of Doliana in northwestern Epirus (Douzougli and Zachos 1994: 14–17, 2002: 124–143) is relevant to the earliest appearance of K II in Epirus. At this site, the floor of a small structure assumed to be a hut dwelling was uncovered. The strata associated with the hut were surprisingly rich in pottery and faunal remains of cattle and sheep and goat. On the basis of the ceramics, tentative comparisons were drawn with Eneolithic horizons at Maliq (IIb) and Tren in Albania.³ A chronological framework was established by four radiocarbon samples taken from the level of the floor, which returned calibrated dates extending from 3600–3100 B.C., or Final Neolithic to transitional FN/EBA in the standard Greek terminology. Precise synchronisms with the Albanian material are difficult at present because the parallels cited above rest on stylistic grounds, and in the absence of an absolute chronology of the Albanian Neolithic, ranges of absolute dates from the two areas cannot be compared. In a recent paper, John Coleman (2000) argues for a chronological gap between the Final Neolithic/Chalcolithic and the initial phase of the EBA, and proposes that the EBA was initiated by Indo-Europeans entering the Greek mainland ca. 3200 B.C. with a proto-Greek language and material culture. He emphasizes the dissimilarities in material culture between the Chalcolithic and the earliest Bronze Age, as exemplified in the first and second phases at Petromagoula in Thessaly (Coleman 2000: 127–128). According to Coleman, the second phase material has strong northern connections, particularly to “Bratislava type” pottery found in the Balkans and central Europe and associated with the Baden culture, dated approximately to 3500–3000 B.C. (Maran 1998: 40–41, 344–349, pl. 1–4). The Doliana radiocarbon dates are consistent with those of the Baden culture and Petromagoula’s second phase, and Coleman (2000: 128) enumerates parallels in the Doliana pottery assemblage,

including incised lids and bowls similar to Bratislava type, a bowl with S-profile resembling examples at EBA Pyrasos in Thessaly, and a coarse, open vessel similar to others at EH I Eutresis in Boeotia. Coleman's arguments are not inconsequential, because the arrival of a new population in Epirus at the end of the fourth millennium would pose interesting questions about the relationship of Doliana to what came before and after, not only in terms of material culture, but also in the areas of subsistence strategies and social organization. Douzougli and Zachos (2002: 136) are not so convinced about placing Doliana in the EBA, citing Chalcolithic parallels at least for the S-profile bowl, and it is fair to say that some of the comparanda cited by Coleman reflect general and possibly coincidental stylistic and chronological similarities. They note, however, that sherds with plastic decoration from the upper levels at Doliana could belong to the EBA, by comparison with similar specimens at Maliq IIIa. The significance of placing Doliana in either of the two chronological phases is not yet entirely clear, but the site may in fact straddle them.

The pottery at Doliana consists exclusively of coarse-fabric vessels; even thin-walled vessels contain coarse inclusions and are distinguished mainly by surface treatment. Most of the shapes are open. The excavator has defined three principal categories of vessel forms: 1) storage vessels of various heights and thicknesses, including open vessels with wide mouths and vertical walls; 2) bowls and basins, including bowls with S-profiles, hemispherical bowls with vertical or flaring rims, bowls with lips cut obliquely toward the interior, and deep bowls with incurving rims; and 3) open, conical storage containers with thick walls, flat bases, and one or two vertical handles (Douzougli and Zachos 1994: pl. 3–5, 2002: 127, figs. 5–12). One group of small bowls, found in the lower levels at Doliana, has special significance for placing the site in a wider Balkan context (Douzougli and Zachos 2002: 132, figs. 10, 11). These shallow bowls with convex walls and vertical rims belong to Maran's "bowls and lids of Bratislava type," with parallels from the Ionian Sea to the Carpathian plains in the Chalcolithic and beginning of the EBA. Two of the bowls are decorated with engraved spirals and concentric circles, which appear in the Chalcolithic in Albania (Maliq II, Tren II) and Kosovo, and in the EBA in Bulgaria (Radomir-Vahovo level V). Once again, the possibility emerges that Doliana bridges the Chalcolithic and the earliest EBA.

Many of the coarser vessels exhibit variegated surface colors, with alternating zones of black and red, while a high proportion of the thinner-walled vessels have black, hard-fired surfaces. Some vessels have circular holes drilled just below the rim, presumably for hanging. Decoration consists of combinations of plastic bands, either plain, incised, or finger-impressed, and applied horizontally, vertically, and obliquely to the vessel body (Douzougli and Zachos 1994: pl. 5 α – β). The engraved spirals and concentric circles on the small Bratislava-type bowls are sometimes filled with a white paste (Douzougli and Zachos 1994: pl. 4), and other bowls have small clay lumps similar

to those found more frequently on K II specimens. A handful of the bowls have black, burnished surfaces, or the application of an even red slip.

The bulk of the pottery assemblage from Doliana reveals general similarities to K II coarse ware, but significant differences as well. The resemblances lie mainly in wall thickness, firing colors, surface texture, and the predominance of open shapes (Douzougli and Zachos 1994: 17), features that are coincidental to functional requirements (based on common subsistence strategies) and technological limitations. The excavator attributes them to the conservatism that is evident in Epirote pottery manufacture throughout prehistory. The divergences in form and treatment are more striking: the corpus of pottery at Doliana is characterized by wider variation in shapes; less gritty, harder-fired fabrics; and richer, more elaborate decoration. The care taken in forming and embellishing even the most quotidian storage jar, and the skill in achieving a hard surface in firing, stand in contrast to the indifferent treatment accorded most K II vessels. The clay was better refined for medium to heavy vessels: in sherds from larger, thicker pots, a dark gray to black firing core is often present, but the fabric is less gritty and much harder fired than that of K II type. As is the case in the K II repertoire, plastic decoration primarily adorns larger, utilitarian vessels; yet, although the aesthetic conception is related, and almost certainly ancestral, to the plastic decoration found on K II pottery, the Doliana assemblage exhibits superior execution, and broader variety and enhanced elaboration of forms. Applied cordons tend to be executed in higher relief, some raised up to 10 mm off the vessel surface. Combinations of cordon styles and orientations appear on single vessels: e.g., an undulating coil of pinched clay meanders beneath a horizontal impressed clay band; a complex system of horizontal and vertical impressed bands creates a "boxwork" design (Douzougli and Zachos 1994: pl. 5 β); and a raised band with oblique incisions is placed below another with rounded finger impressions. On many examples, elaborate applied designs fairly crowd the body. In terms of ornament, the Doliana vessels differ from K II in the breadth of the decorative repertoire, and in the syntax of ornamentation, i.e., the positioning and relationship of motifs to each other on the vessels, and the shapes on which the motifs appear.

Taken together, the attributes of Doliana ware indicate a tradition chronologically and decoratively distinct from that which gave rise to K II pottery, a position that is underscored by the excavator's suggestion that we may speak of a "Doliana culture" (Douzougli and Zachos 1994: 16–17). The differences in the ceramic traditions are particularly meaningful in light of the fact that Doliana is a humble context that is probably typical of small settlements of the transitional period between the Neolithic and Bronze Ages; there is no reason to suspect that the Doliana sherds represent finer specimens than were generally in circulation at the time.

It is not possible with currently available information to know how and when the K II tradition came to supersede the coarse ware of Doliana type, if indeed the latter is representative of its epoch. Two decades ago, K II could not be positively dated earlier than its association with imported artifacts in 13th–12th century contexts (Vokotopoulou 1986: 355). Since that time, the confirmed use life of K II has been pushed back to the early stages of the Late Bronze Age by association with earlier imports, and recently by two radiocarbon dates from the Nikopolis Project (see Chapter 4, entries for Galatas and Skaphidaki). It is likely, however, that K II constitutes the utilitarian coarse ware in use through much if not all of the Bronze Age, and it is merely a matter of time before conclusive proof is found that some of the sites producing this type of pottery belong to earlier phases of the Bronze Age. Although the developments that succeeded the habitation of Doliana and ushered K II into common use are unknown, it is difficult to escape an impression of retrenchment in the Bronze Age in the skill and care with which pottery was made, at least in the one and a half millennia that correspond to the southern Greek Early and Middle Bronze Ages. This phenomenon is not unique to Epirus, at least in the Early Bronze Age: a similar deterioration in pottery fabric from the preceding Neolithic levels is apparent in Albania at such sites as Maliq (IIIa: Wardle 1972: 43), Nezir (IIIa: Andrea 1984: 106), and Dajç (II: Andrea 1992: 75). The earliest EBA pottery of Albania, described as coarse and crudely decorated (and according to Andrea [2002: 165], more “primitive”), is considered a new tradition that appears along with the use of tumulus burials. The parallels between this pottery at Maliq IIIa and assemblages in Macedonia and Thessaly (Prendi 2002: 88) may lend support to Coleman’s hypothesis of Indo-European migrations into Greece at that time.

We may look to the Neolithic–Bronze Age transition in Albania, rather than to the east, for persuasive antecedents to K II pottery. The Pindos mountain range appears to have been a formidable barrier to communication with the provinces of Macedonia and Thessaly in prehistory. The pottery of Doliana exhibits little evidence of influence from across the Pindos; instead, cultural contacts were realized via the more accessible valleys of the Drinos, Kalamas, and Aoos rivers (Douzougli and Zachos 1994: 17). Macedonian influences in pottery shapes and styles are not manifested in Epirus until the Late Bronze Age, when wishbone handles became commonplace for a time at Dodona and a few other sites (Evangelides 1935; Hammond 1967: 304), and later in the Late Bronze Age–Early Iron Age transitional period, when Northwestern matt-painted vessels served as prototypes to local matt-painted and orange-red undecorated wares (see Category IV, below). Even in these cases, the technological information and the goods themselves may have been transported through Albania, rather than directly across the Pindos mountains within Greece.

An additional chronological indication for the use life of K II pottery in Epirus is the fact that in the Ionian Islands,

Red Ware and related traditions appear to span the entire Bronze Age. The coarseware pottery from securely dated Early, Middle, and Late Bronze Age contexts is often indistinguishable (e.g., coarse vessels with coils, nail impressions, knobs, and lugs in LBA tombs on Kephallenia [Souyoudzoglou-Haywood 1999: 75–76]; and “pellet ware” from LBA contexts at Polis and Treis Langades on Ithaka find parallels with similarly embellished EBA coarseware throughout the Ionian Islands and Kerkira [Souyoudzoglou-Haywood 1999: 27–28, 106]). The longevity of this tradition on the nearby Ionian Islands lends support to the notion that K II, within the chronological boundaries set by the sites of Doliana and Vitsa, served as coarse domestic pottery throughout the two millennia of the Bronze Age.

Category III (K III): Coarse and Semi-coarse Table Ware

Category III is a numerically small group of small to medium handmade vessels that comprise the finer end of a continuous spectrum of fabric consistencies represented by both K II and K III. K III is never found without K II, although the reverse situation is common.

Physical appearance

K III vessels are dark-surfaced, usually brownish black to black in color, and often thin-walled. The interior and/or exterior surfaces are smoothed (i.e., by hand or with a soft tool), and occasionally burnished (i.e., with a hard tool). The smoothed or burnished surface never achieves the soapy texture notable in the Minyan ware to which K III is often compared. A dark slip of purified clay is sometimes applied. The clay is refined to remove most of the coarser inclusions, and the firing is more uniform and thorough, resulting in a harder fabric that is typically of uniform color through the section. K III is unpainted, and decorated only sporadically with the same repertoire of plastic ornament used on K II pots, but the finger-impressed cordons, clay pellets, and series of incisions are more delicately executed.

K III is typically found in small, hemispherical single- and double-handled cups, conical and hemispherical bowls, and dippers (Figure 5.2), sometimes in shapes and surface treatments that specifically recall Minyan types (Evangelides 1935: 196–198; Dakaris 1951, 1952; Hammond 1967: 308). The profile of these shapes often shows a carination at the join of the shoulder and belly or at mid-belly. Deep bowls or wide-mouthed jars with vertical strap handles placed on the shoulder were also executed, albeit infrequently, in this finer version (Dakaris 1951: 179, fig. 4.3). The handles are almost exclusively vertical, and include vertical strap or ribbon handles to shoulder (Rutter 1995: ill. C-3) on single-handled cups, and high-swung, vertical handles to rim (Rutter 1995: ill. C-3) on double-handled cups. Ribbon handles sometimes have a central depression or groove running along the length (Dakaris 1951: fig. 4.1). Handles are in some examples replaced by lugs, which may be triangular or semicircular in plan. Some

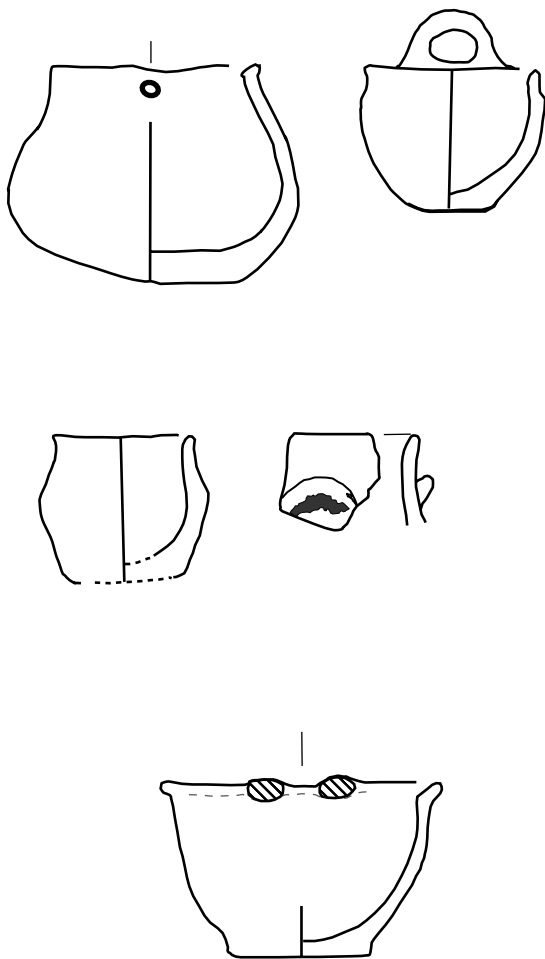


Figure 5.2 Examples of vessel forms in K III pottery. After Hammond 1967.

of these are pierced vertically and some have hollow undersides in section (Hammond 1967: 308). Most rims are everted or vertical, although the other forms—incurving, flaring, spreading, and doubly offset—are represented in smaller quantities. Bases are flat or rounded in the hemispherical cups (Wardle 1972: fig. 128), while double-handled cups and kraters have round bottoms (Wardle 1972: fig. 129). Other, more conical shapes have flat bases (Wardle 1972: fig. 129: 600). Closed shapes are rare in categories II and III.

Forming and firing characteristics

The chief visual distinctions between K II and K III pottery are in vessel size, range of shapes, clay treatment, firing results, and to some extent, surface treatment. K III is dominated by cups, small bowls, and similar shapes that suggest drinking and eating; in other words, in functional terms K III is table ware. These shapes are, on average, smaller than the bowls and pithoid forms of K II, many of which were surely intended for storage purposes. K III is also characterized by a finer clay body, with fewer and smaller inclusions, greater care in surface treatment, and a harder, more completely fired fabric.

The differences derive in part from more attentive treatment accorded to eating and drinking vessels, and in part from

properties of the prevailing technology of firing. The raw clay was more carefully refined to remove large inclusions; in some examples, fine-grained sand appears to have been added as temper. It is plausible that finer clays were specially selected as more suitable to the manufacture of table ware. The properties of open firing were manipulated to achieve other effects. The thinness of the walls permitted more complete firing and a harder fabric, because maximum temperatures were often maintained long enough to penetrate and fire the entire wall section; nonetheless, even small K III vessels sometimes have a distinct black inner core. Some method of isolating the vessel from oxygen during firing yielded the dark surface and section colors, e.g., covering the pots with wood fuel and heaping ashes over them as the fuel burned away.

It seems that potters were fully mindful of the interrelatedness of vessel appearance, function, and technology. A good demonstration is provided by the use of surface smoothing (or, rarely, burnishing), which went well beyond a simple desire to create attractive vessels. Inspection of the corpus of prehistoric sherds collected by the Nikopolis Project reveals a clear statistical preference for smoothing the *interior* surfaces of both K II and K III vessels. Such a bias would be odd from a decorative standpoint, but makes good sense in terms of vessel function and use. Smoothing or burnishing reduces somewhat the *permeability* of the vessel surface; i.e., the seepage of liquid contained in a vessel, or the penetration of exterior moisture from the atmosphere or resting surface (Rice 1987: 230–231). High permeability is undesirable in drinking, cooking, and storage containers into which liquids are introduced. The smoothed interior surfaces of many cups and small bowls of K III type accordingly reflect a desire to reduce permeability and thus control seepage of liquids. It is significant as well that interior smoothing is not uncommon in medium to large K II vessels, many of which were used for cooking or storage. At the same time, coarse K II pots are highly *porous*, referring to the ubiquity of pores or spaces *within* the wall, which allows liquids to move through the wall once they have penetrated the surface (Rice 1987: 231), and reduces the risk of thermal shock in firing and subsequent use for cooking or boiling. By these and other manipulations of the ceramic fabric, potters were able to use a simple technology to manufacture perfectly functional vessels.

Origin and chronology

Prototypes for K III have been sought primarily in Minyan and other dark-surfaced pottery of the late Early and Middle Bronze Age in Greece (Dakaris 1952: 370–373; Hammond 1967: 308–309), and in the much later pottery of the Urnfield culture of the middle Danube (later 13th and 12th centuries B.C.), with intermediate stages in the Adriatic region and southern Italy (Vokotopoulou 1986: 356; Kilian 1978, 1988: 127, 133, figs. 5, 6; Deger-Jalkotzy 1977). The latter scenario is based on comparisons between pottery of K III type excavated in cist graves at Elaphotopos, and dark-surfaced wares of Apulia and the Adriatic

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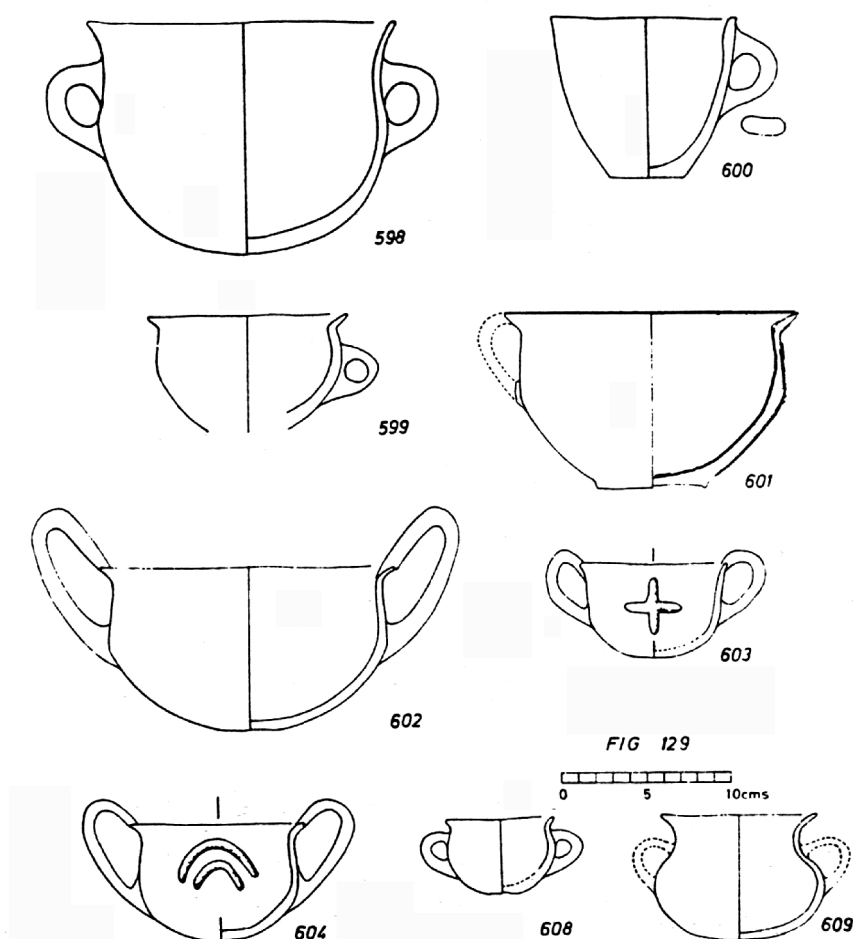


Figure 5.3 K III vessels in shapes similar to Minyan ware, from Dodona. After Wardle 1972.

(Vokotopoulou 1969a: 184 and n. 5). Wardle (1972: 182) is probably correct in regarding these similarities as very general, and therefore not convincing. A further objection is that the development and transmission of Urnfield wares through the Adriatic region could scarcely have been accomplished before the late stages of the Late Bronze Age, placing a limiting terminus post quem on their appearance in Epirus that does not accord well with emerging evidence. The arguments of Kilian and Deger-Jalkotzy have more relevance to the vexed issue of “Barbarian Ware,” a group of handmade, burnished vessels with some resemblance to K III pottery, which appeared intrusively in late Mycenaean (LH IIIC) contexts in the Peloponnese and surrounding areas (for recent summaries and alternative interpretations of the evidence, see Small 1990; Rutter 1990; Bankoff, Meyer, and Stefanovich 1996). The evidence of this pottery, which has so far been found in very small quantities at most of the sites at which it is known, has been adduced by some to demonstrate a migration of Epirotes (as invaders, refugees, or slaves) to southern Greece upon the collapse of the Mycenaean palace system. To the many objections to this notion that Rutter outlines may be added that the large, burnished vessels that appear at Mycenae and other sites were never part of the K III repertoire (Wardle 1993: 124).

The parallels with certain common Minyan shapes are quite close, on the other hand (Figures 5.3, 5.4). The double-handled (kantharos) and single-handled cup shapes in particular are identical to those that developed and persisted in the Minyan repertoire from the later Early Bronze Age to early Mycenaean times. Dakaris viewed category III ware as the product of the first “Greek” tribes arriving in Epirus toward the end of the Early Bronze Age. In his opinion, the crude appearance of the Epirote version pointed to a prototypical stage in the development of Minyan ware, and thus to a date at the end of the Early Helladic period (EH III). Hammond (1967: 309) advocated a slightly later arrival in the Middle Helladic period, resulting from the spread of Early Helladic people and their dark-surfaced and Minyan prototypes from Corinth and central Greece, first to the Ionian Islands, and later to the Epirote mainland.

Wardle (1972: 208–209) cast serious doubt on these speculations by rejecting, correctly, the partition of K II and K III into distinct categories. The usual descriptions of K II and K III (including the foregoing) illustrate the “canonical” versions of each, i.e., the coarser, plastic-decorated pithoi and jars on the one hand, and the small, thin-walled cups and bowls on the other. If the entire range

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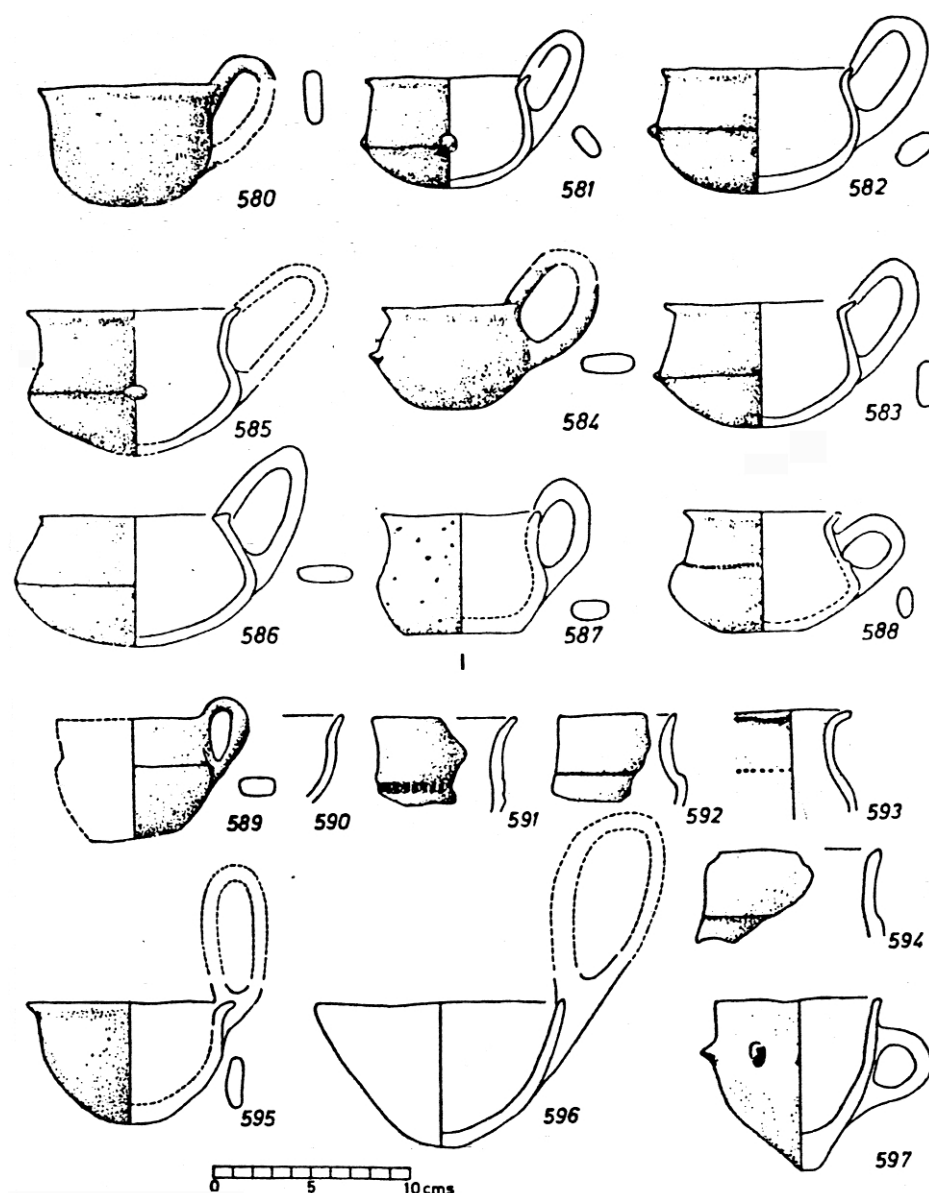


Figure 5.4 K III vessels in shapes similar to Minyan ware, from Elaphotopos, Mazaraki, and Dodona. After Wardle 1972.

of local handmade wares is viewed as a continuum, however, a substantial percentage of the sherds and whole vessels show attributes traditionally associated with both categories. Wardle preferred instead a wide K II/III spectrum in which variation in form and appearance was influenced most profoundly by function. In his analysis of over 3,500 sherds excavated by Dakaris at Dodona in the late 1960s, Wardle (1972: 194) found that 79% of the sherds of K II/III type derived from crude, poorly fired pots, while the fine, “canonical” K III type accounted for only 2.5%. More than 18% of the sherds fell somewhere in the middle. He noted further that the clay and firing appeared on visual inspection to be similar across the K II/III spectrum, and that small vessels were rarely of crude fabric. These observations led to the conclusion that the differences in treatment and appearance are normal for an assemblage that encompasses functions of storage, cooking, eating, and

drinking. Large storage vessels tend naturally to be coarser and cruder than table ware. Dakaris (1951: 179–180) and Hammond (1967: 309) actually recognized the shared techniques and decorative features, but chose to explain them as a mixing of traditions, in which native potters learned superior techniques of forming and firing from immigrants, who in turn adapted the local style of plastic decoration to their wares. Accordingly, they assigned a separate origin and chronology to K II and K III.

Wardle’s work shows convincingly that K II and K III (or more precisely, K II/III) constitute a single, technologically and aesthetically homogeneous ceramic tradition encompassing a complete range of the functions required by the society that produced them. But this determination does not require us to assume the absence of formal development with time, or to reject the potential for

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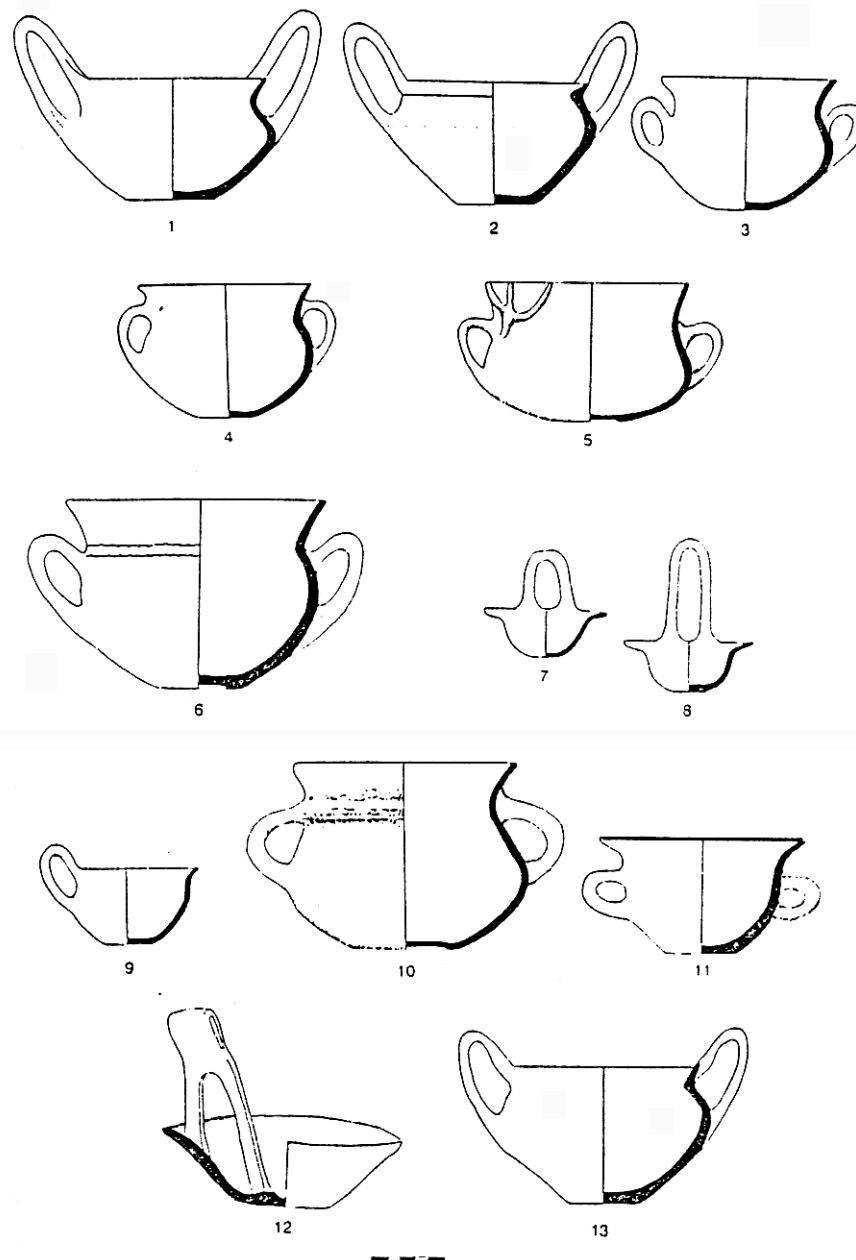


Figure 5.5 Dark-surfaced “Pseudo-Minyan” pottery from Albania. After Prendi 1982, Bejko 1994.

inspiration from contact with the outside world. The parallels with Minyan ware provide a case in point. Features such as smoothing or burnishing and hard-fired, dark gray to black surfaces have of themselves little typological or chronological significance, but their occurrence on shapes that are identical to the commonest shapes in the Minyan repertoire commands our attention. This is particularly so because the regions surrounding Epirus, including Albania, Macedonia, and the Ionian Islands, had strong connections to the Middle Helladic traditions of the Aegean, and one of the primary manifestations of the relationship was the adoption and development of pottery that imitated the Minyan ware of southern and central Greece. The association of the dark-surfaced and “pseudo-Minyan” wares of these peripheral regions with Minyan models is supported by accompanying finds of Middle Helladic objects, chiefly bronze weapons (but also genuine Minyan

pottery in the Ionian Islands), certainly imported from the Aegean. A brief examination of the evidence from southern Albania and the Ionian Islands will place the situation in Epirus in perspective.

Aegean influence in Albania in the Middle Bronze Age

The handmade pottery fired by controlled reduction found in Middle Bronze Age contexts in southern Albania is considered to be “Minyan of non-classical production”; i.e., a provincial imitation (Bejko 1994: 111). Prendi (2002: 90) compares this repertoire, in technological and typological terms, to imitation Minyan ware of Lefkas and coastal Macedonia. The surfaces, as is the case with K III, are gray to black in color, and smoothed or occasionally burnished. The primary shapes are kantharoi, spherical bowls, smaller hemispherical cups, and dippers (Figure

5.5). The find contexts of this dark-surfaced pottery include open settlements (e.g., Maliq IIIc), burial tumuli (e.g., Vajzë, Vodhinë, Bajkaj), and caves (e.g., Katundas). An understanding of the timing of the appearance and development of this pottery in Albania is aided by association with Aegean bronze artifacts. There is, however, no consensus on the first appearance of Minyan or Minyan-inspired pottery in Albania. Prendi (2002: 89) cites the occurrence at EBA Maliq (IIIa) of two-handled bowls that he considers of Minyan type. “Northern” wishbone handles, which may once have been attached to a kantharos-like vessel, are known from EBA levels at Maliq and at a few sites in Macedonia (Souyoudzoglou-Haywood 1999: 102). A later benchmark is Vajzë Tumulus I, where sherds from Minyan-inspired vessels were associated with an Aegean sword of ca. 1700–1500 B.C. (Prendi 1982: 216). Other Minyan forms are represented by a spherical bowl and a pair of dippers (Figure 5.5: 3–5, 7–8) found in association with a Middle Helladic bronze dagger in Vodhinë tumulus Cremation 16 in the Drinos valley. Many Albanian scholars believe that the association at Vajzë sets the appearance of pseudo-Minyan pottery not earlier than the 18th century, although Bejko (1994: 112) argues for an arrival in the 19th century or earlier, on the basis of formal characteristics of shapes that are found at Vodhinë and elsewhere, which he believes developed nearly contemporaneously with the genuine Minyan article. Recent adjustments to the absolute chronology of the Helladic Bronze Age (Manning 1995) favor Bejko’s position by pushing individual phases of the Middle Bronze Age back a century or more (if one in fact accepts the “high chronology,” to which there remains considerable opposition). Most of the pseudo-Minyan pottery dates to the late Minyan series, however. A kantharos from the Vajzë tumulus (Figure 5.5: 2) found in association with a long sword of Sandars type A has been assigned, by virtue of the vessel form, which is typical of the Shaft Grave era, and the likely date of the sword, to the years ca. 1600–1550 B.C. (Prendi 1982: 216–217, fig. 40.1), although that date would be raised in accordance with Manning’s adjustments. Closer to the Adriatic coast, the Bajkaj tumulus in the Delvinë plain produced all of the typical Minyan shapes found in Albania.

Southern Albania has also produced a remarkable collection of Middle Bronze Age bronzes of Aegean provenience (Hammond 1967: 328–331; Kilian-Dirlmeier 1993), which document a close contact with the Minoan/Mycenaean world. The sword recovered from Vajzë Tumulus I, mentioned above, finds close parallels at Lefkas Grave R7 and in the Shaft Graves at Mycenae (Hammond 1967: 320). Four daggers known from southern Albania, two from Vajzë and one each from Vodhinë and Pazhok, are probably of Middle Bronze Age date (Bejko 1994: 116). A dagger from the Vodhinë tumulus, Grave 16, has Minoan antecedents in EM II and MM II, with comparanda at Lerna. Bejko (1994: 116) places it in the early Middle Helladic. Another dagger from Pazhok Tumulus I should be dated, along with its context, to MH II (ca. 1950/1900–1750/1720

B.C.), contra Prendi, who preferred a LH I date. One of the Vajzë daggers, from the soil of Tumulus A, has a close parallel at Lerna from a MH I context (Bejko 1994: 116), as well as similarities to a dagger from Lefkas Grave F7 (Hammond 1967: 330). Bronze knives of Aegean type first appeared at Vajzë, Pazhok, and the Mati valley in the Middle Bronze Age. Type V, straight-backed knives turned up in Middle Helladic contexts in tumuli at Vajzë and Pazhok; this type is found also at Dodona in a somewhat later context, and elsewhere at Ithaka and Amorgos (Bejko 1994: 117). Finally, three Middle Bronze Age spearheads come from the graves and surrounding soil of Vajzë Tumulus I (Prendi 1982: 218, fig. 40.7–9; Bejko 1994: 117). One of these is a slotted type IIa, assigned to MH I–II at Mallia and Amorgos; another is a shoe-socketed type Va, found in Middle Helladic contexts at Sesklo and in Lefkas Grave F7. The bronze weapons of Albania include imports from the Aegean world, as well as examples that were probably manufactured in peripheral regions such as Thessaly or northwestern Greece (Prendi 2002: 92).

Aegean influence in the Ionian Islands in the Middle Bronze Age

A similar record of contact with the Aegean prevailed in the Ionian Islands, where the Middle Helladic period witnessed strong influence from the mainland Minyan potting tradition, although the actual quantity of imported Minyan pottery is small. Imported True Gray Minyan (TGM) is known at Ithaka, and in some sherds from Skaros and Amalia on Lefkas (Souyoudzoglou-Haywood 1999: 101; Dörpfeld 1927). On the other hand, Minyan-inspired pottery was manufactured and used extensively on all of the Ionian Islands, as well as on Kerkyra. Typical Minyan shapes, including kantharoi, one-handled cups, and bowls, were executed in both fine and semi-coarse versions, among them variants of Gray Minyan on Ithaka, Kephallenia, and Lefkas, “Mottled Grey Ware” on Kerkyra, “Northern” ware on Ithaka, and semi-coarse wares on Lefkas and Kephallenia (Souyoudzoglou-Haywood 1999: 11–12, 32–33, 48, 101–102). These shapes were also produced in local imitations of Matt-painted and Yellow Minyan wares of the later MBA and early LBA. On some islands, such as Kephallenia and Ithaka, Middle Bronze Age shapes persisted until LH III (Souyoudzoglou-Haywood 1999: 48), and this is certainly the case in Epirus as well. Explicit connections have been made between Epirote K III and MBA fabrics of the Ionian Islands, including “Mottled Grey Ware” and the semi-coarse pottery of Lefkas.

The S-Graves at Skaros (Middle Bronze Age) and F-Graves at Steno (later Middle Bronze Age to the beginning of the Late Bronze Age) on Lefkas are predominantly cist graves set within tumuli, in a manner similar to those in Albania (Dörpfeld 1927). The pottery found in the S-graves is mostly of monochrome gray to black type, with shapes related to Gray Minyan, including the kantharos, the development of which can be observed in the sequence of

burials over time (Wardle 1972: 36). The F-Graves are somewhat later, as more vessels in lighter fabrics that evoke Yellow Minyan ware are present (Wardle 1972: 36). The usual Minyan-influenced cup and bowl shapes occur at both locations, along with vessels that seem to foreshadow the transitional period to Late Helladic, which is clearly expressed also in the slab cist cemetery at Kokkolata on the island of Kephallenia.

The metal weapons and implements from the tumuli of Lefkas reveal connections with the Aegean world in the EBA and MBA (Souyoudzoglou-Haywood 1999: 28–29, tables I.1, I.3). From the R-Graves, spearheads, daggers, swords, and knives have mainly Cycladic and Minoan sources spanning the Early Bronze Age. The S- and F-Graves have produced daggers of Minoan type, and a spearhead that has antecedents both in Thessaly and Crete. The spearhead and a dagger from Grave F7 find parallels in the Vajžë tumuli in Albania, as noted above.

The similarities are close between the Albanian tumuli and the S- and F-Graves with regard to tomb morphology and the assemblages of Aegean metal and ceramic imports.⁴ They manifest a period of interaction with mainland Greece and the Aegean that intensified in the latter half of the Middle Helladic period. In Epirus, these influences were felt, but later than elsewhere and probably never firsthand. Instead, a particular isolation seems to have fallen over Epirus in the third millennium and persisted until the Late Bronze Age. A case in point is the tumulus as a burial form, which developed much earlier and saw much wider adoption in all of the territories adjacent to Epirus: Albania, the Ionian Islands, and western Greece (see Forsén 1992: 232–236). In Albania, a number of tumuli were in use prior to the Late Bronze Age, e.g., at Vajžë, Pazhok, Vodhinë, Dukat, Dedaj, Burrel, Barç, Piskova, and Shtoj (Andrea 1984, 1992; Korkuti and Petruso 1993). In Epirus, on the other hand, tumuli never entirely superseded simple cist or pit burials. Tumuli have been confirmed at several locations in Epirus: three individual tumuli at Ephyra near the mouth of the Acheron (Dakaris and Papadopoulos 1976; Papadopoulos 1979, 1984), and extensive tumulus cemeteries at Kato Meropi, Palaiopyrgos, and Kephallavryso in the Gormos valley of northern (Greek) Epirus (Andreou 1983, 1984, 1988, 1994: 234–236). Other tumuli are reported at Stephani, Oropos, and Theriakisio (Hammond 1997: 45), and still others have been postulated without published evidence as yet, at Vitsa (Vokotopoulou 1986: 353), Asphaka and Ammotopos (Hammond 1997: 45), and Thesprotiko and Pogoni (Andreou 1994). Whereas these discoveries suggest that tumuli are waiting to be discovered and were used more commonly than previously believed, none of the Epirote tumuli can be dated earlier than Late Helladic III and many belong entirely to the Early Iron Age. The same lag is evident in the appearance of Aegean metal and ceramic types, which are already apparent from EH II in the Lefkas R-Graves, and from the early stages of the Middle Helladic in southern Albania.

A Minyan-inspired subset of K II/III

Features such as surface smoothing, dark surfaces, and even clay treatment to achieve a finer fabric have little diagnostic significance and in fact appear across the K II/III spectrum. On the other hand, I propose that at some point in the second millennium B.C., provincial imitations of Minyan vessels arrived in Epirus, most likely from Albania or the Ionian Islands, and that Epirote potters imitated their shapes and appearance using the modest technology they had at their disposal.

On present evidence, a source to the north is to be favored, because neither in Epirus nor Albania is there evidence of imported fine Minyan vessels, in contrast to their modest presence in the Ionian Islands and on the mainland in Aitolokarania. Even more telling is the absence in both Albania and Epirus of Matt-painted and Yellow Minyan wares of the MBA and early LBA, which appear in varying quantities on Ithaka, Kephallenia, and Lefkas and show contacts with southern and central Greece. An indirect acquisition of prototypes explains the obvious differences from true Minyan ware, i.e., the absence of wheelmade specimens, and the extreme rarity of burnishing to a lustrous finish. Yet this small innovation marked an awakening to outside influences that would progress slowly, and come to fruition only in the mature stages of the Late Bronze Age.

Very few data are available for determining the absolute chronology of this phenomenon, but it is unlikely that the incipient contacts could have occurred much earlier or later than the period known for southern Greece as the Shaft Grave era, corresponding in ceramic terms to MH III, LH I, and the beginning of LH IIA (ca. 1750–1600) (Rutter 1993: 785–786, table 2). Some evidence to support this hypothesis has emerged recently in Epirus itself. In 1987, a cist grave uncovered at Skaphidaki (Site E-6) on the Ayios Thomas peninsula in southernmost Epirus produced, among other grave goods, two complete spherical bowls and two bronze pins (Andreou 1987: 319, pl. 177α). The pins, which have biconical heads and bear incised linear decoration, may be assigned on typological grounds to the beginning of the Late Helladic period (K. Zachos, personal communication, 1995), while the spherical bowls are similar in shape and treatment to pseudo-Minyan vessels from Albania and elsewhere (e.g., Bejko 1994: figs. 4.3, 4.6). Less than 100 m from the cist grave, a stratified occupational sequence was discovered in situ in a road cutting during surface survey in 1993 (Site N-17; see entry in Chapter 4). A radiocarbon sample taken from a shell layer just beneath the lowest occupation stratum returned a calibrated date of ca. 1700 B.C., near the end of MH or at the MH III/LH I transition. If the settlement was founded shortly after this, as appears to be the case, the grave and the occupation are probably related. A small number of sherds of canonical K III type were recovered from the earliest occupation stratum, although the shapes of the original vessels could not be reconstructed with confidence.

Another *in situ* profile was identified during survey at Galatas (N-19) in the Thesprotiko valley; a radiocarbon sample taken directly from one of the occupation strata produced a calibrated date around 1400 B.C., or LH IIIA. Sherds from canonical K III, as well as provincial Mycenaean, pottery were recovered from the stratum.

These meager results form a beginning at pushing the chronology of the expression of K III that was influenced by provincial Minyan ware back from the 13th century. I would hypothesize that K III vessels influenced by Minyan traditions received their impetus from southern Albania after the provincial version of Minyan ware was standardized there; this seems to have occurred in the late stages of the Middle Bronze Age. Accordingly, I would look to a mature stage of the Shaft Grave era—perhaps toward the end of the 17th century or even into the 16th century—for the earliest attempts to emulate this ware in Epirus. The fruits of exposure to new ideas and objects were incorporated gradually over the course of the Late Bronze Age, as innovations in metalworking and ceramic production were introduced from Greece and the Balkans. Vessels representing the finer end of the K II/III tradition, including those emulating Minyan shapes and surface treatments, continued to be made in reduced numbers into the Early Iron Age, surviving, for example, in a few small kantharoi, a small jug, and a cup in the cemetery at Vitsa (Vokotopoulou 1986: 355). The Minyan-inspired shapes persisted even as fabrics changed: more than a third of the vessels excavated in the Iron Age graves at Vitsa were kantharoi (Vokotopoulou 1986: 234–236, figs. 7–8). A similar survival of the kantharos form is evident in the Ionian Islands (Souyoudzoglou-Haywood 1999: table G.3).

In conclusion, I propose that a “Minyan-inspired” tradition evolved in Epirus, taking its impetus from imitations of Minyan ware brought from southern Albania, and employing already-existing techniques of making finer vessels (i.e., those traditionally designated K III). I am not suggesting, therefore, that this tradition lies outside the K II/III ceramic spectrum, but that it was influenced from abroad, and as a consequence may have an important chronological utility.

Category IV (K IV), Macedonian Matt-Painted, and Related Wares

The pottery Dakaris (1952) classified as Category IV, on the basis of his excavations at Kastritsa, has clear affinities to the tradition of Late Bronze Age matt-painted wares that arose to the east, probably in Macedonia. Dakaris identified two variants, K IVa and K IVb, the latter present in minuscule quantities at Kastritsa and Dodona, and very rare elsewhere. K IVb will not be considered further, except to note that it may be related to Iron Age wares in Epirus, such as Vokotopoulou’s Class I at Vitsa (1986: 362).

Physical appearance

K IVa vessels are handmade, mostly thin-walled, formed from well-processed clay, and hard-fired to a uniform

orange or red color. In some instances, a distinct gray core layer is present. The surfaces are often smoothed, and usually unslipped. Decoration consists of linear, geometric designs executed in matt dark brown or black paint. Among the common geometric motifs are pendent, solidly painted triangles; zigzag lines; horizontal, undulating bands; hatched triangles and lozenges; checkerboard patterns; and S-shapes (Figures 5.6, 5.7; Dakaris 1951: 180–181, fig. 6; Hammond 1967: 292). The prevalent shapes are small, deep bowls with vertical ribbon handles connecting shoulder and rim (Hammond 1967: fig. 10k–m), cutaway-neck jugs, tankards, hydrias, and deep kylikes with conical body, high, cylindrical stem, and ring base (Dakaris 1951: 182, 1952: 373–374). This pottery has turned up in small amounts at many sites in Epirus.

Origin and Chronology

K IVa is related to the general class of pottery known as “Northwestern matt-painted,” “Macedonian matt-painted,” “Devollian,” or “Boubousti” ware, the latter term taken from the site in western Macedonia at which it was first identified (Heurtley 1926–1927). The geographical distribution of this pottery is wide: it is known in Greece from Macedonia, Thessaly, Epirus, and perhaps as far south as Aitolia; outside of Greece it has been found in southern Albania, Yugoslav Macedonia, and Bulgaria (Wardle 1972: 201; Vokotopoulou 1986: 364). A point of origin is not conclusively demonstrated, but a concentration of several dozen findspots in western Macedonia and southeastern Albania suggests a source in the vicinity.

Heurtley discerned two chronological phases in the development of Northwestern matt-painted ware at Boubousti. The first (phase I) lasted from the 12th–10th centuries B.C., and may have inherited a Late Bronze Age matt-painted tradition from central Macedonia (Vokotopoulou 1986: 365). The pottery of this first phase was manufactured to a high standard: the clay is well refined, the vessel walls thin and hard-fired. The carefully drawn geometric designs were applied before firing. Shapes include hemispherical skyphoi with semicircular, triangular, or wishbone handles set horizontally; kantharoi; small, biconical amphoras with two or four handles; and various jug forms. Several sites in the northern half of Epirus have produced sherds and vessels from phase I, including Kastritsa, Dodona, Koutselio, Pedina, Merope, Vitsa, and Krya. They are considered intrusive, and thus imported, to Epirus.

Phase II in the sequence of Boubousti ware, dated to the 9th–7th centuries, is characterized by a deterioration in the quality of production (Vokotopoulou 1986: 365). The bulk of the pots are thicker, coarser, and not as well fired as previously. The painted designs, although similar in motif, were applied in thick brush strokes after firing, with the result that they rub off easily. The repertoire of shapes changes somewhat: kantharoi, beaked jugs, and amphoras with two to four handles predominate, with cups, double cups, and jugs with cylindrical necks present in lesser

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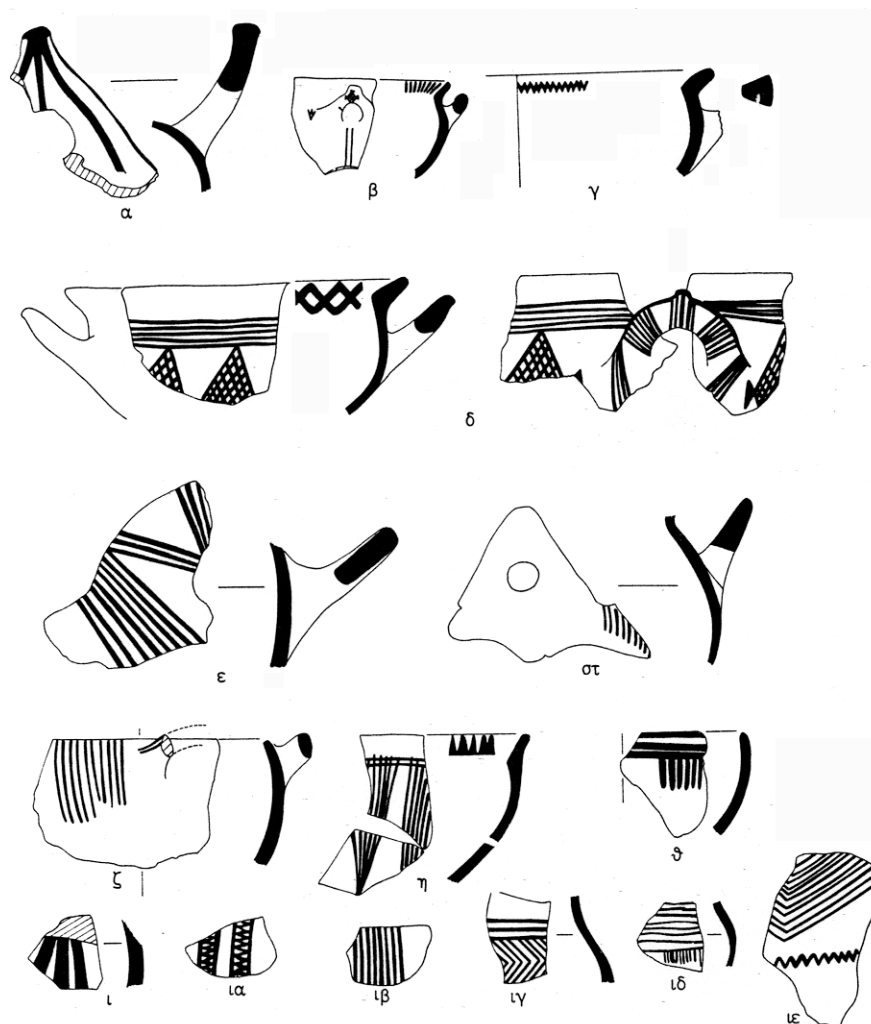


Figure 5.6 K IV pottery shapes and profiles from Vitsa. After Vokotopoulou 1986.

numbers. Skyphoi are no longer used. In Epirus, this pottery is considered a local imitation of Boubousti phase II, and is known at fewer sites, including Vitsa and Krya.

The sequence of Northwestern matt-painted pottery in Epirus is best observed at the excavated sites of Vitsa, situated at over 1,000 masl in the rugged mountain region of Zagoria, and Krya, lying at lower elevation on the fringes of a now-drained portion of Lake Pamvotis just north of Ioannina. At Vitsa, sherds from phase I skyphoi with semicircular or wishbone handles were discovered mixed among, but not inside, the graves of the South Cemetery (Vokotopoulou 1986: 356, drawings 55, 56, 57β–ε). These sherds possess the distinguishing features of the early phase ware: refined clay, excellent firing, painted decoration that was applied before firing and thus does not flake off. The excavator hypothesizes that these sherds washed down into the South Cemetery from the surrounding hills.

By contrast, a presumably local version of the later phase of Northwestern matt-painted ware was found in graves throughout the site. This ware forms part of Vokotopoulou's local Class II pottery at Vitsa, dated with the help of imported vessels from Thessaly, the Corinthia, and western Greece to the 9th–7th centuries (Vokotopoulou 1986: fig.

22). The qualities of this ware correspond to those of the phase II vessels at Boubousti: the paste is thicker and coarser, the firing more haphazard, and the painted decoration fugitive from application after firing.

Excavation at Krya has documented the succession of Northwestern matt-painted phases I and II in a settlement context (Andreou 1988; Douzougli and Zachos 1994; Zachos 1997; Tartaron and Zachos 1999: 70–71). A relatively secure chronology independent of the matt-painted pottery is provided by bronze artifacts and ceramics with connections to southern Greek types. The earliest objects may be imported kylikes of late LH IIIC date (Tartaron and Zachos 1999: fig. 13), while occupation in Submycenaean times is assured by the presence of several kylix sherds and a bronze pin of known Submycenaean–Protogeometric type (Douzougli and Zachos 1994: 12). A layer-by-layer analysis of the occupational strata at Krya (K. Zachos, personal communication, 1995) demonstrates a succession of the two phases of Northwestern matt-painted ware mirroring that noted at Vitsa and Boubousti. Although the shapes are still under study, the other characteristics that distinguish phase I and phase II follow precisely the same pattern. The foundation of Krya in the last years of LH IIIC or shortly thereafter confines the

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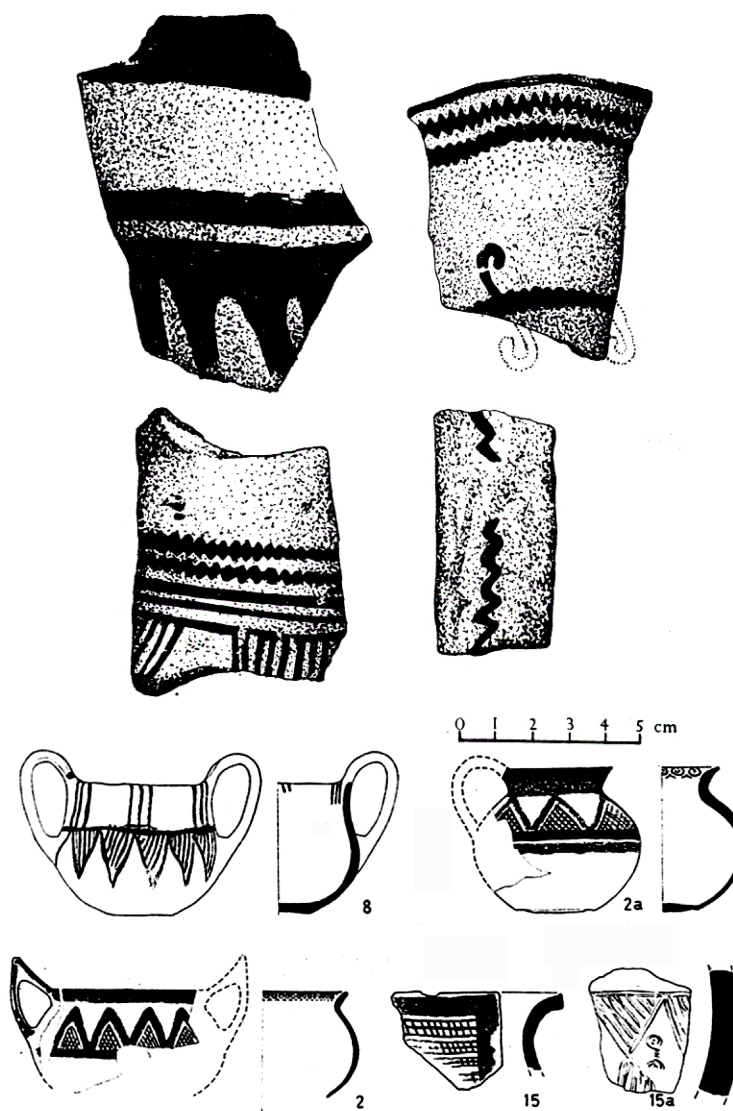


Figure 5.7 K IV vessels and sherds from Dodona (top two rows), and Boubousti I ware from western Macedonia (bottom two rows). After Hammond 1967, Romiopoulou 1971.

appearance of Northwestern matt-painted pottery there to the 11th century or later.

The diffusion of matt-painted pottery from Macedonia westward might logically be sought in southern Albania. Geographically, southeastern Albania and Boubousti in western Macedonia are linked by an easily negotiable east-west passage (Figure 5.8), and it is likely that the two areas formed a continuous cultural zone. Southeastern Albania, most notably the district of the Korçë plain, shows signs of a sharing of material culture with the adjacent regions of western Macedonia from the Neolithic period onward (Prendi 1982). The Epirotes were able to tap into this region by means of north-south-trending river valleys proceeding to Albania, rather than eastward across the Pindos mountains to Macedonia and Thessaly. For this reason, the material culture of Epirus had little in common with that of the provinces across the Pindos range before the influence of matt-painted pottery was felt (a possible exception is the wishbone handle, which may have arrived at Dodona earlier in the Late Bronze Age, but is not known

to have been widespread). Therefore, the incorporation of Macedonian matt-painted pottery in Albania would reasonably be expected to predate its appearance in Epirus, and it could be conjectured that the first Epirote examples of the matt-painted ware were obtained through contacts with southern Albania.

Recent research in the Korçë plain has focused on the chronology of matt-painted wares of Macedonian type in the area (Prendi 1982: 221–222; Andrea 1992: 84–85; Korkuti and Petruso 1993: 714–715). The late prehistoric sequence is best known at the open settlement of Maliq, where renewed excavations in the late 1980s aimed at elucidating the sequence of matt-painted pottery, known there as “Devollian” after the river valley where it was first identified in Albania. It was determined that Devollian ware first appeared at Maliq after the 13th century B.C., in Maliq IIIId2, a level that was dated by bone pins typical of the 13th–12th centuries in Greece (Andrea 1992: 84–85; Korkuti and Petruso 1993: 715). It was formerly believed that the earliest Devollian ware, appearing in level IIIId2,

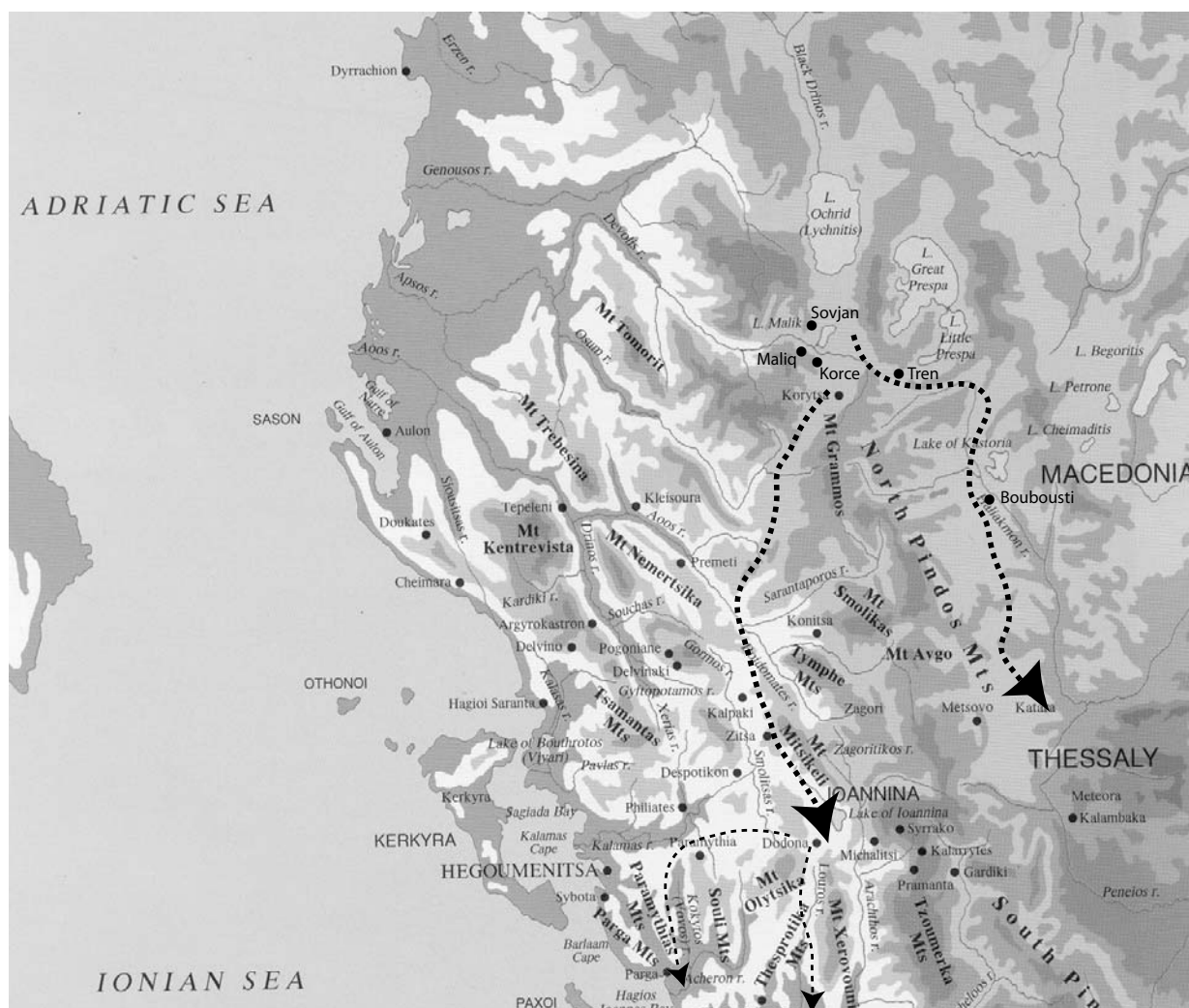


Figure 5.8 Topographic map of Epirus and surrounding regions, showing the relatively easy routes connecting south-eastern Albania with western Macedonia (note location of Boubousti near Aliakmon River) and central Epirus (Dodona), and thence to coastal lowland Epirus. Adapted from Hammond 1997.

was of inferior quality, and painted after firing; in the succeeding level (Maliq IIIId3), the high-quality version corresponding to Boubousti phase I, painted before firing, first appeared (Prendi 1982: 221–222). Now it seems possible that the two varieties came into use contemporaneously in Maliq IIIId2, but given the limited extent of the recent excavations, it is perhaps unwise to dismiss the previous stratigraphic evidence. Ongoing investigations at Maliq will perhaps arrive at a more definitive answer soon. Another result of the excavations was the assignment of Maliq IIIId3, strongly characterized by Devollian ware of high-quality, Boubousti phase I type, to the beginning of the Iron Age. Investigations at Sovjan, less than four km north of Maliq, confirm the outlines of this chronology (Korkuti and Petruso 1993: 715), and, at least for now, support Prendi's original interpretation of the stratigraphy at Maliq. At Sovjan, a Late Bronze Age phase dated not earlier than the 14th century by a Mycenaean LH IIIA vessel and a bone pin of Mycenaean type contains no Devollian ware. In the following phase, matt-painted pottery of the inferior type, with unslipped

surfaces and post-firing painted decoration, signals the initial appearance of the Devollian style.

Clarification of the ceramic sequence in southern Albania holds considerable significance for estimating the timing of the arrival of Northwestern matt-painted ware in Epirus. If, in accordance with the geographical arguments presented above, this pottery was first brought to Epirus from Albania, I do not think this could have taken place before high-quality Devollian was firmly established at sites like Maliq, since the poorer version painted after firing is not attested in Epirus before the 9th century. The advent of Devollian pottery in Albania is unfortunately not precisely dated; perhaps the earliest known contexts in Albania are graves in Tumulus I at Barç in which Devollian ware is found with Mycenaean vases of probable LH IIIC date (Wardle 1977: 180). In settlement contexts, on the other hand, Devollian ware is found only in stratigraphic contexts later than those containing Mycenaean pottery. Some resolution to the persistent problem of matt-painted pottery chronology in western Macedonia may be

forthcoming from recent excavations at Aiani, where matt-painted and Mycenaean pottery was found together in burials and other contexts (Karametrou-Mentesidi 1989: 49; Andreou, Fotiadis, and Kotsakis 1996: 567–568). The discrepancy between the Albanian evidence from funerary as opposed to settlement contexts may mean that imported Mycenaean vessels were retained as prized heirlooms for several generations, to be deposited ultimately in Iron Age burials. Whatever the case may be, the evidence from Maliq, Sovjan, and several tumuli favors a date for the appearance of Devollian ware in middle–late LH IIIC, perhaps in the late 12th or early 11th century B.C., in general agreement with the recent Macedonian finds. Whether or not an inferior version was for a time the only matt-painted pottery in use, by the Early Iron Age the Boubousti phase I style was firmly established; it is therefore to those years that I would look for the movement of matt-painted pottery from southeastern Albania, southward along the western flanks of the Pindos range, through the westernmost projection of Macedonia, and into Epirus (Figure 5.8). Several Albanian sites along this corridor have produced matt-painted pottery in recent years (L. Bejko, personal communication, 1995).

It may well be that the site of Krya will demonstrate an early stage in this process. The presence of matt-painted pottery of Boubousti phase I type in the Submycenaean–Protogeometric strata may indicate that this intrusive style reached the Ioannina basin sometime in the 11th century, perhaps closer to 1000 B.C. Other sites in Epirus have not provided comparably precise contextual data as yet. The matt-painted sherds of phase I type from the Vitsa cemeteries are not in situ, and therefore the chronology suggested by the excavator merely reflects the wide chronological range (end of the Bronze Age to Protogeometric times) proposed at Boubousti; the protohistoric settlement at Vitsa has not been published. The same pottery, classified by Dakaris as Category IVa, was found together with Mycenaean pottery at Dodona, but the deposit was mixed, and thus of no chronological value. The remaining sites at which such early matt-painted pottery has been found are either unpublished (e.g., Ephyra), or else burials in which no closely datable objects accompany the K IVa sherds. The circumstances and chronology surrounding the succession of Boubousti phase II style upon phase I at Krya may emerge from the ongoing stratigraphic research; at Vitsa, the use life of the later version is well dated by imports from southern Greece.

The relative sequence of events outlined above is, of course, provisional, and the margin of uncertainty is great. Certain significant observations can be made, however. A new style of matt-painted pottery arose in western Macedonia and southeastern Albania in the last years of the Bronze Age, possibly related in shapes and decoration to Late Bronze Age ware from central Macedonia. Within a century, a high degree of competence in decorating and firing vessels had been achieved, and examples in substantial numbers had arrived in central Epirus.

Orange-red ware

In his study of the prehistoric pottery from Dakaris' excavation at Dodona, Wardle (1972: 204–207; 1977: 180–181) identified a class of pottery, which he termed “Orange-red ware” for convenience, that had not been assigned previously to one of the categories. Orange-red ware is handmade, but evenly formed and fired to a porous, orange to red, and often powdery, surface. The surface is almost never burnished, slipped, or decorated in any way. A common feature is a distinct blue-gray to gray core that can be thick or thin, but sections of uniform color throughout are by no means scarce. The visual evidence, indicating an accomplished control over the conditions of firing, prompted Wardle (1977: 181) to suggest that Orange-red ware was the first in Epirus to be fired in a built kiln. A small kiln discovered at Dodona may or may not be associated with a few sherds of Protogeometric type (Dakaris 1967a, b); if so, there is a broad chronological correlation with Orange-red ware.

The technical features of Orange-red ware show close familiarity with the Macedonian pottery of Boubousti type, and the two must be closely related. The wide distribution and relative abundance of Orange-red ware throughout Epirus point, however, to local production for everyday needs. At Vitsa, a late version of such pottery was a common feature of late 9th–7th century graves, forming part of Vokotopoulou's (1986: 362) class III pottery. Earlier occurrences are attested at Dodona, Ephyra, and Krya. In the occupation strata at Krya, both the earlier- and later-phase matt-painted ware were accompanied by unpainted orange-red pottery, the development of which appears to parallel that seen at Dodona and Vitsa. Wardle (1972: 204) estimated that Orange-red sherds comprised 16% of those he examined from Dodona. In an informal survey of just over 400 prehistoric sherds from 43 randomly chosen excavated contexts from Ephyra, I found the Orange-red type to approximate 5%. (The disparity in the percentages may be a fortuitous result of the nature of the samples, or may reflect regional variability, a topic to which I shall turn below.) Orange-red ware is found at many other locations for which quantitative data are unavailable.

The assemblage of Orange-red pottery at Dodona is quite fragmentary, with the result that few shapes could be identified (Wardle 1972: 204–205; 1977: 181). A small globular cutaway neck jar survived intact, and a few sherds are from the spout and neck of other examples of the same shape (Wardle 1972: fig. 126: 540, 545–547). A globular jug with a cylindrical neck and vertical handle was identified, as well as spreading rims from jugs or amphoras (Wardle 1972: fig. 126: 541–543). Bowls are small and handleless (Wardle 1972: fig. 126: 551), deeper with flat base and vertical handles (Wardle 1972: fig. 126: 552–553), or conical (Wardle 1972: fig. 126: 554–555). Horizontal loop handles (Wardle 1972: fig. 126: 556), vertical handles set on the shoulder (Wardle 1972: fig. 126: 557–558), and vertical handles rising above the rim (Wardle

1972: fig. 126: 559) are all found on bowl shapes. Bases are almost exclusively flat, although Wardle noted two ring bases and the leg of a probable tripod vessel (1972: fig. 127: 560, 567). At Vitsa, surviving vessel shapes are primarily the round-bellied jug with narrow, cylindrical spout, of the first half of the 8th century (prochos group α : Vokotopoulou 1986: 236–237, fig. 9); and various two-, three-, and four-handled amphoras (groups α , β , $\delta 2$, ϵ , and $\sigma\tau$, ranging in date from the mid-9th to the mid-8th century: Vokotopoulou 1986: 241–245, fig. 10). It is noteworthy that this ware comprises large and small vessels, with thick and thin walls. It may be that some of the functional categories that were once occupied by K II/III vessels were gradually filled by the newer, better-fired ware—an exception being the larger storage vessels.

Once again, a lack of closely dated deposits prevents a clear idea of when the manufacture of Orange-red ware began in Epirus, but the phenomenon must be tied to the appearance of matt-painted ware at the outset of the Iron Age. The profound contrast between Orange-red and K II/III pottery implies that technological information was brought to Epirus along with matt-painted pottery. Orange-red ware was found at Krya (Zachos' category 3: Douzougli and Zachos 1994: 13), and perhaps an estimate of its first appearance there will emerge. Similar hard-fired, red to orange ware with frequent gray cores appeared at Vergina and other sites in Macedonia at the beginning of the Iron Age (Vokotopoulou 1986: 252 n. 85), leading Wardle (1972: 205) to guess at ca. 1000 B.C. for the arrival of Orange-red ware at Dodona—an estimate that conforms well to the rough chronology followed here.

Mycenaean Pottery

Pottery of Mycenaean type forms the most abundant material indication of contact with the Mycenaean world. Sherds and whole vessels have been found at a total of 16 sites (Table 8.1). In nearly all cases, they comprise a very small percentage of the ceramic assemblages, which are without exception dominated by local wares. The greatest proportion of Mycenaean sherds may occur at Ephyra, the fortified site near the mouth of the Acheron River, where, according to Kilian (1986: 284 n. 28), they could account for as much as 15% of the prehistoric pottery. My own unscientific survey of just over 400 prehistoric sherds from 43 excavated contexts at Ephyra yielded a range of 8–13%, depending on the correct identification of sherds from which decoration had disappeared. At Dodona, by contrast, Mycenaean pottery comprises 5% of a late prehistoric deposit from the sanctuary area (Wardle 1972: 197–198). The relative abundance of Mycenaean ware at Ephyra underscores the importance of the settlement's location overlooking a wide, protected bay on a presumed Adriatic trade route.

The Mycenaean pottery includes both imports and local imitations. The former group is much larger, although it is possible that many sherds from imitation vessels have gone

unrecognized as a consequence of their resemblance to local fabrics (Soueref 1986: 87). The imported vases appear to have come from provincial production centers, such as Aitolokarnania or the Ionian Islands, rather than from the "core area" in central Greece and the Peloponnese. Therefore, the distinction that can be made in other peripheral regions between imported Mycenaean from the core area and that from provincial production centers (e.g., Buxeda i Garrigós et al. 2003) does not hold, except perhaps in rare cases, in Epirus. Local imitations of Mycenaean shapes are rendered in a rather crude, gritty reddish fabric.

The Mycenaean pottery found in Epirus has received substantial description and analysis. In addition to Wardle's analysis of the Bouleuterion deposit at Dodona, vessels and sherds from several burials have been studied, notably those from the Kiperi tholos (Papadopoulos 1981b) and from the cist tombs near Mazaraki (Vokotopoulou 1969b: 199–201). Soueref (1986: 83–90) summarized and discussed all of the Mycenaean pottery of Epirus.

The most common vessel shape is the kylix (FS 256–258, 264, 274–275). In the Bouleuterion deposit at Dodona, kylix sherds make up approximately 22% of the Mycenaean pottery (Wardle 1972: 198). Complete or nearly complete kylikes are known from Kiperi, Dodona, Mazaraki, Kastritsa, Ephyra, and in fragmentary form at a few other sites. Most have tall, slender stems that are either solidly painted or decorated with bands. The earliest kylikes, from the Kiperi tholos tomb, are assigned to LH IIIA1 or LH IIIA1–2 (Papadopoulos 1981b: 16–18, fig. 4: 24–33). Sherds from Dodona decorated with whorl shell and chevron motifs (FM 23 and 58) are of LH IIIA2 date (Wardle 1972: fig. 124: 476–477). Other fragments datable generally to LH IIIA and IIIB are found at Dodona and Ephyra. Judging from the preliminary reports, the kylix shape must be the most common at Ephyra as well. The series of imported kylikes continues into LH IIIC, as suggested by monochrome examples from Dodona and Mazaraki. The crude, locally made kylix from Dodona with traces of matt-painted, geometric ornament (Museum of Ioannina MI 3692: Papadopoulos 1976: pl. 4 β) may belong, along with a fragmentary example from Kastritsa, to the Early Iron Age (Figure 5.9).

Stirrup jars and alabastra are relatively common Mycenaean shapes as well. The earliest stirrup jars are represented by a complete globular example (FS 170 or 171) from Mazaraki that has been assigned to LH IIIA2–B (Vokotopoulou 1969b: 199, pl. 29 α , β); in accord with more recent information (Mountjoy 1986: 77–79), a date in LH IIIA2 is preferable. Two painted fragments from the Kiperi tholos are probably of the same date (Papadopoulos 1981b: 14, fig. 3.14–15). A complete example from Kastritsa, globular tending to ovoid (FS 175), is assigned to LH IIIB–C1, but could be as late as LH IIIC Middle (Mountjoy 1986: 168–169); and sherds that could not be closely dated were discovered at Dodona and Ephyra. Alabastra exist in fragmentary form at Kiperi, Ephyra, and Dodona.

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Figure 5.9 Handmade kylix of local manufacture, Dodona.

Substantial portions of three flat, squat alabastra (FS 84), as well as sherds from several others, were discovered in the Kiperi tholos (Figure 5.10; Papadopoulos 1981b: 12–14, figs. 1–2). The shapes and decorative motifs suggest a date not later than LH IIIA1 (Mountjoy 1986: 57). Alabastron fragments from the acropolis at Ephyra have been placed more generally in LH IIIA and IIIB (Papadopoulos 1980, 1984). A few sherds possibly coming from alabastra, including a rim and a loop handle, were reported at Dodona (Wardle 1972: fig. 124: 496). The rounded alabastron (FS 85) from Mazaraki (Vokotopoulou 1969b: 200, pl. 29γδ) is deemed a local or provincial imitation of a LH IIIB form.

Other open shapes that occur in modest quantities at many sites are kraters (e.g., FS 8, 281) and deep bowls (FS 284–285). At Ephyra there is a complete, wheelmade “skyphos-type krateriskos” from Tumulus A, provisionally dated to LH IIIA or IIIB (Figure 5.11; Dakaris 1975a: 151, pl. 127α), that probably belongs to FS 281 (ring-based krater), with a LH IIIB chronology (see Mountjoy 1986: 116, 129). Sherds from kraters with monochrome interiors and occasional patterned decoration are reported at Dodona, as are fragments of cups and stemmed bowls (FS 305) with horizontal loop handles (Wardle 1972: 197–198). At Ephyra, sherds from cups and deep bowls may encompass LH IIIA–LH IIIC (Papadopoulos 1983, 1984). A dipper from Mazaraki that imitates the Mycenaean FS 236 form is of LH IIIB or IIIC type.

Closed shapes are additionally represented by piriform jars (e.g., FS 39, 45, 58) and amphora-like vessels. Rim and base sherds from piriform jars are illustrated from Dodona (Wardle 1972: fig. 124: 491–493) and the Kiperi tholos,

where a few of the sherds are dated by Papadopoulos (1981b: 16, fig. 3: 17–22) to LH IIIA.

The range and proportions of Mycenaean vessel forms may hold enlightening information on the way they were used in Epirus. Broadly, we may speculate that the closed vessels were valued for their precious contents, while the open forms were employed in eating, drinking, and feasting, with a possible emphasis on competitive performance. Both categories imply elite access and the potential for conspicuous consumption and display.

Stirrup jars and alabastra are closely associated with the export of prestigious liquid commodities such as perfumed olive oil, which was the focus of a palace-controlled industry at Pylos in LH IIIB (Shelmerdine 1984). The consumption of these oils in personal and perhaps ritual contexts seems to have been a limited privilege in Epirus, although the few extant examples come from both burials and settlements. Subsequent to their initial life as containers of precious liquids, the pots likely retained their prestige value as markers of access to exotic Mycenaean goods. The symbolic value of these vessels explains their placement in burials at Mazaraki and Kiperi.

The open shapes—kylikes, kraters, cups, and bowls—served as containers for food and drink. The predominance of the kylix in Epirote assemblages is particularly fascinating and informative. In the Mycenaean core area, kylikes are ubiquitous in LH IIIB assemblages, and there is strong evidence that they held an important role in wine-drinking during feasts and rituals, possibly including rites of initiation (Wright 1994, 1996a; Galaty 1999: 49–52; Killen 1994; Saflund 1980). At the Mycenaean palace at Pylos, nearly 50% of the more than 8,000 vessels were kylikes, and there is ample evidence that they were used for ritual activity in the palace (Galaty 1999: 50–51), although they were certainly also used in palatial and non-palatial contexts as everyday drinking cups (Cherry and Davis 1999; Thomas 2004). Kylikes are found in burials, sometimes among deliberately shattered or punctured vessels as part of funerary feasts (Soles 1999). Kraters may have been used in Mycenaean times alongside kylikes to mix wine with water (Wright 1996a: 303–305).

Recent studies indicate that the acquisition of wine-drinking and its attached rituals may play a transformative role in the emergence of social and political complexity. A study by Michael Dietler (1990) proposes that Celtic chiefs who acquired wine from Greeks and Etruscans were motivated to engage in competitive drinking and feasting ceremonies, and Wright (1996a: 293–307) has applied this model to the emergence of Mycenaean complexity in the Shaft Grave era. We might envision emerging warrior elites in the coastal zone of the lower Acheron River, seeking to enhance and consolidate their status by emulating Mycenaean practices in competitive feasting with exotic ritual equipment such as the imported kylix. On the other hand, Mycenaean pots may have held prestige value simply as

CERAMICS

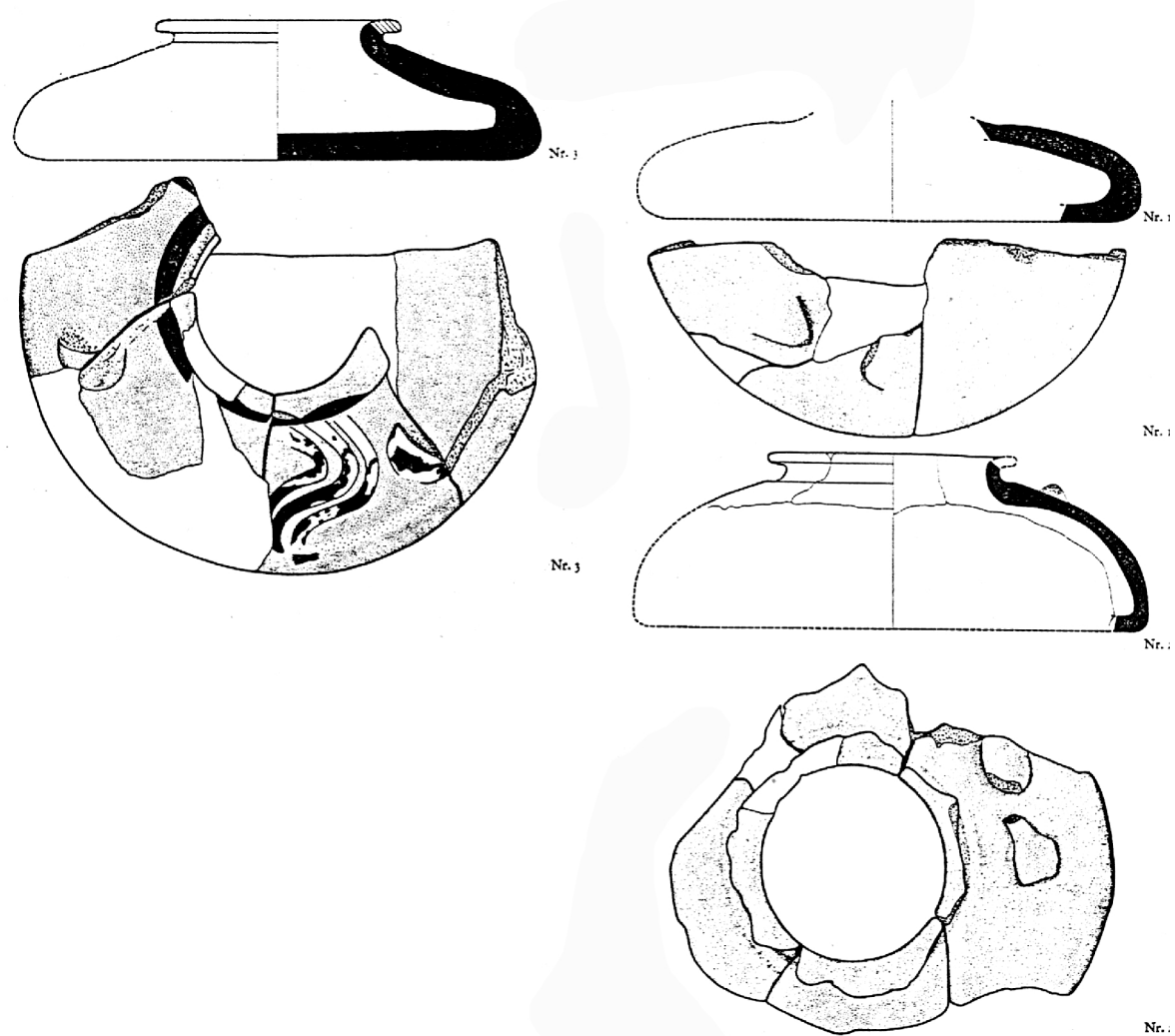


Figure 5.10 Fragments of squat alabastra from the tholos tomb, Kiperi. After Papadopoulos 1981b.

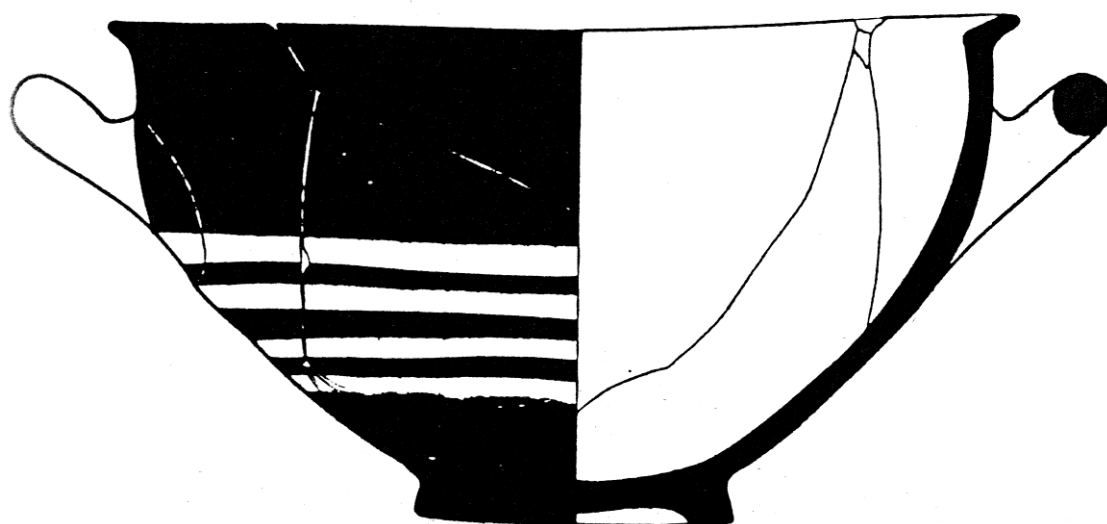


Figure 5.11 "Skyphos-type krateriskos," Ephra. From Soueref 1986.

exotic objects, which were adapted to everyday use as ordinary tableware vessels. The evidence is intriguing, but it is not possible to be certain how Epirote elites used the kylix. Alternative scenarios will be taken up in Chapter 8.

The ceramic evidence indicates that Mycenaean influence was felt in Epirus earlier than in Albania. Leaving aside the Vapheio cup of LH IIA date from Pazhok Tumulus I, which seems truly to be an isolated find, it appears that the first imports to Albania did not arrive until at least a mature phase of LH IIIB, and most of the Mycenaean known at present belongs to late LH IIIC (Bejko 1994: 117–124). A kylix from Tren with characteristics of LH IIIB may be the earliest vessel (Bejko 1994: 123). Most of the Albanian imports are paralleled by western Peloponnesian or Ionian Island types, although influence from Macedonia or Thessaly is detected in a few examples.

Mycenaean pottery arrived early to the Ionian Islands, particularly on Zakynthos, the island closest to the Peloponnesian mainland, where sherds as early as LH I have been recovered (Hope-Simpson 1981: 154–159). Zakynthians were in touch with the earliest development of Mycenaean styles in shapes such as Vapheio cups, squat jars, alabastra, and piriform jars, through contacts with Elis and Messenia (Souyoudzoglou-Haywood 1999: 125). On Ithaka too there is LH I–II pottery, mainly cups with parallels in Elis and Phokis, and there may have been some sharing of these early specimens with Zakynthos (Souyoudzoglou-Haywood 1999: 106). The bulk of the imported and locally manufactured Mycenaean pottery falls in late LH IIIA to LH IIIC, however, and the islands were especially prominent in preserving Mycenaean material culture in LH IIIC. After the collapse of the main palace centers in southern Greece, the Ionian Islands and the northwestern Peloponnese experienced renewed prosperity and developed uniquely local Mycenaean traditions.

The mainland region of Aitolia was perhaps the earliest source of Mycenaean influence in Epirus. The architecture and contents of the tholos tomb at Kiperi find remarkably close parallels at the coastal site of Ayios Ilias north of Messolongi. Ayios Ilias was a prominent Mycenaean center in LH IIB–LH IIIA1 (Wardle 1977: 162), and the Kiperi tomb and its contents may mark an initial thrust of Mycenaean influence into Epirus from that direction in LH IIIA, to be superseded by close ties with the Ionian Islands in LH IIIB and LH IIIC. The influence of the islands of Ithaka and Kephallenia was felt throughout Epirus in LH IIIB and LH IIIC; many of the extant vessels from Epirote sites find their closest parallels there (Soueref 1986: 147–150). The sites of Lakkithra and Metaxata on Kephallenia, and Pelikata, Polis Cave, and Aetos on Ithaka provide good comparanda for the imported kylikes, stirrup jars, alabastra, and dippers of Epirus. It is significant that the kylix is also the most common shape on Ithaka in LH IIIA–IIIB/C (Souyoudzoglou-Haywood 1999: 104), with a particular concentration in LH IIIB and many examples in LH IIIC.

Much work remains to be done on the existing corpus of Mycenaean-type pottery, and with luck new assemblages will be found in datable stratigraphic contexts. As a start, a detailed and comprehensive analysis of the pottery from Ephyra would shed light on the nature and source of the contacts by which Mycenaean and Mycenaean-inspired pottery was conveyed to Epirus.

Conclusions

The ceramic evidence for the Epirote Bronze Age documents the insular existence of a population closed off from the east by the rugged Pindos mountains, and from the west by the sea in the centuries before maritime navigation of the Adriatic became regular. Our first glimpse at prehistoric pottery, from the tiny Final Neolithic habitation at Doliana, reveals a community in contact with developments in Albania, and indirectly with Macedonia in such elements as encrusted decoration. The ensuing 15 centuries are, in archaeological terms, chronologically and socially undefined: not a single site or artifact can at present be attributed conclusively to the period from 3100–1600 B.C. I have argued that K II/III ware, representing a diminished (or, at least simpler) form of the pottery used at Doliana, may have been the sole class of pottery that was used in that long expanse of time to satisfy the basic needs of small farming and herding communities for containers. It was suggested recently that the majority of containers may have been made of wood, skin, and other perishable materials, thus making ceramic vessels of limited importance (Wardle 1993: 124). This point is worthy of careful consideration, because if true, it suggests a genuine absence of ceramic material during that time span, explicable as an issue of supply of durable artifacts. I find this scenario unconvincing, however—the poor chronological precision of Epirote prehistory offers a more economic and plausible explanation. As the ceramic assemblage at Doliana shows, inhabitants of simple huts had perfectly adequate potting skills (or access to such pots) already in the Final Neolithic period. There is currently no evidence, such as a sharp cultural break or a replacement of population, to insinuate that this simple technology was lost altogether. Whatever the truth regarding habitation and the role of pottery in Epirus in the early stages of the Bronze Age, it is difficult to escape the conclusion that this was a period of intense isolation. For proof, we need only look to the vigorous contacts that Albania and the Ionian Islands maintained with the Aegean world in the later Early Bronze Age right through the Middle Bronze Age.

An initial impetus for change came from the direction of Albania around the time of the Shaft Grave era, perhaps in the 17th century B.C. Imitations of Minyan vessels, incorporated into the southern Albanian repertoire as gray-fabric (reduction-fired) or “pseudo-Minyan” pottery, were brought to Epirus and copied by Epirote potters using many of the techniques they already possessed for making table ware. This development signaled the beginning of a gradual

CERAMICS

Table 5.1 Hypothetical chronological framework for prehistoric pottery, Epirus.*

<i>Years B.C.</i>	K II/III	K III “pseudo- Minyan”	K IVa Boubousti I	Boubousti II	Orange- red	Mycenaean
3000	○					
2900	○					
2800	○					
2700	○					
2600	○					
2500	○					
2400	○					
2300	○					
2200	○					
2100	○					
2000	○					
1900	○					
1800	○					
1700	○	○				
1600	●	●				
1500	●	●				
1400	●	●				●
1300	●	●				●
1200	●	●				●
1100	●	●	●		○	●
1000	●	●	●		●	●
900	●	●	●	●	●	
800		●		●	●	
700				●	●	

* Key: ○ = hypothetical; ● = certain

opening to foreign products and ideas that led to the formation, by the 14th century, of ties with emerging Mycenaean centers in western Greece and the Ionian Islands. Those ties were strengthened, notably with the Ionian Islands, in the 14th–12th centuries. In the time of transition from the Bronze Age to the Iron Age, as the traditions of the Mycenaean world began to wane, a second wave of influence from the north is marked in part by the appearance in Epirus of matt-painted pottery of Macedonian origin, almost certainly brought to Epirus through southeastern Albania. At that time, and perhaps in association with this ware, new information permitted local potters to enhance their control over the firing environment, resulting in a superior orange-red handmade pottery that may eventually have replaced the enduring K II/III, which went largely out of use by the 9th century B.C.

A provisional chronology for each pottery type, based on the arguments advanced in this chapter, is presented in Table 5.1. Because the site chronologies proposed in Chapters 4, 8, and 9 rely chiefly on ceramics, I have attempted to be explicit, both in this chapter and in the table, about portions of the chronologies that are conjectural. The status of chronological ranges presented

as “hypothetical” may be resolved before long as archaeological research on prehistory continues.

II: Bronze Age Pottery from the Nikopolis Project Surface Survey

Approximately 2,500 sherds of Bronze Age date were counted in some 530 survey units; of these, just over 2,000 were retained for the Project’s contextual collection. In view of the poorly understood Bronze Age ceramic sequence, an effort was made to collect all prehistoric sherds, except for tiny, undiagnostic fragments, in order to provide the largest possible sample for analysis. Pottery sherds comprise the vast majority of the surface objects that can be assigned with confidence to the Bronze Age. Flaked stone tools and debris must account for as many pieces or more, but at present only a fraction of the vast number of lithic specimens acquired from survey can be placed, either by association or comparison with known types, in the Bronze Age.

Sherds of the main Bronze Age categories were recovered at a total of 41 findspots (Table 5.2). In the table, Dakaris’ K II and K III, i.e., the coarser and finer vessels

manufactured in the local Bronze Age tradition, are collapsed into a single category, K II/III. Only those K III sherds derived clearly from Minyan shapes are distinguished from the main group as a separate category, “K III pseudo-Minyan.” Taken together with sherds of the finer end of the K II/III spectrum that I consider not to reflect Minyan influence (i.e., “canonical” K III), the total representation of the rigidly defined finer pottery is approximately 3.0 percent. The category “Orange-red, matt-painted” encompasses the decorated and undecorated orange to red wares of the last years of the Bronze Age and the Early Iron Age, known by various names: K IVa, Macedonian matt-painted, Northwestern matt-painted, Boubousti ware, Devollian ware, and Orange-red ware. Mycenaean pottery comprises fragments of fine to medium fabrics, imported from provincial Mycenaean centers.

The most striking pattern detectable from these data is the overwhelming preponderance in nearly every context of native K II/III; this is true even at sites that possess incontrovertible evidence of foreign presence, such as Ephyra in the lower Acheron plain and Kiperi near Parga. Sherds from the other traditions combined make up less than 7% of the total. The single exception to this pattern is the unusual stratified roadcut at Skaphidaki on the Ayios Thomas peninsula, which is considered in some detail in Chapters 4 and 8. In their entirety, the statistics reinforce the view that at no point in the Bronze Age was Epirus part of the Aegean or European world, in any meaningful sense. In order to assess the pottery in terms of specific objectives set out below, systematic observations and analyses were performed on each category.

Research Design

In the balance of this chapter I summarize the main characteristics of the Bronze Age pottery obtained from surface survey. The specific objectives of this analysis are the following: 1) to present descriptive and quantitative data pertaining to the sherds collected from survey units; 2) to evaluate the degree to which surface material from southwestern Epirus conforms to existing descriptions and classification schemes; and 3) to assess inter- and intraregional variability in such attributes as color, fabric, and abundance. Locational patterns and detailed observations about specific assemblages are for the most part presented in Chapters 4, 8, and 9 along with the individual findspots.

Data presentation

The Bronze Age pottery obtained from surface survey is analyzed in the following way. In this section, the four principal categories (Table 5.2) are characterized, using sherds from many sites to illustrate the common features as well as the range of variation. The empirical observations made on the sherds included: 1) wall thickness; 2) vessel shape; 3) vessel diameter; 4) surface color; 4) surface treatment, such as slip, smoothing, or burnishing; 5) plastic or painted decoration; 6) inclusions; and 7) firing

characteristics, including completeness and zonation. Certain observations, particularly vessel shape and diameter, were rendered difficult or impossible in most instances by the fragmentary nature of the sherds; an effort was made, nonetheless, to distinguish open and closed shapes, and to estimate diameters of rims. Several variables were amenable to quantification, measured either by dimension (e.g., wall thickness in mm) or by abundance (e.g., the number of plastic-decorated sherds). By making such observations as objective and detailed as was practical, I sought to provide useful comparative data for future studies.

Comparative data

In the course of describing the survey pottery, I look for comparanda to certain collections that have been published, or which I have been able to inspect personally for comparative purposes: chief among these are the excavated assemblages from Dodona, Ephyra, Kiperi, and Krya in Epirus; from Thermon in Aitolia; and from Konispol Cave in southwestern Albania.

The main source of descriptive and quantitative information is the Bouleuterion deposit at Dodona, the only large assemblage of Epirote prehistoric pottery that has been described and analyzed in a comprehensive way (Wardle 1972). The number of sherds collected in the survey (around 2,100) is comparable to that studied by Wardle (approximately 3,680). The contextual differences are significant: a single, excavated deposit from one site as against surface material from many sites distributed over 1,200 sq km. Yet it should be noted that the Bouleuterion deposit is not a pristine stratigraphic context; rather, it is an admixture of Late Bronze Age and Early Iron Age material that may represent 350 years or more of activity. In that respect, the deposit at Dodona is not unlike the surface palimpsests that are discovered in archaeological surveys. Moreover, the existence of these two data sets presents opportunities for comparison and contrast: To what degree is the pottery from the single site representative of the wares and shapes in use generally in the Late Bronze Age–Early Iron Age? Are there regional differences between central and southwestern Epirus? To what factors (chronology, separate influences, site function, etc.) may we attribute the disparities?

In view of the possibilities, I replicated certain measurements used by Wardle in describing the Bouleuterion sherds in the hope that standardized empirical observations would produce a more tangible and accurate impression of the true similarities and differences in the assemblages. The observations concern measurements of dimension, chiefly sherd thickness, and absolute and relative abundance (of wares, shapes, elements, decorative treatments, etc.). The application of similar, quantifiable measurements to the pottery excavated at Konispol Cave promises to provide another set of sorely needed comparative data.

CERAMICS

Table 5.2 Summary of Bronze Age sherds from Nikopolis Project findspots.

<i>Findspot</i>	<i>Site no.</i>	<i>K II/III</i>	<i>K III pseudo-Minyan</i>	<i>Orange-red, matt-painted</i>	<i>Mycenaean</i>	<i>Total</i>
Alonaki Prom.	N-1	7				7
Ammoudia	IF-1	1				1
Ayia Eleni	N-2	2				2
Ayia Triada	IF-4	1				1
Ayios Minas	IF-5	2				2
Cheimadio	N-18	10				10
Ephyra-Nekyo.	E-3	459	12	7	8	486
Galatas	N-19	16	3		2	21
Grammeno	IF-11	1				1
Kastri	E-4	40			1	41
Kastriza	N-3	95	5	11	5	116
Kastriza vicinity	OS-1	3				3
Kastrovyskia	IF-12	3				3
Kiperi	E-20	36		2		38
Kokkinopilos	E-8	3				3
Koroni	N-4	25				25
Koronopoulos	N-5	89			4	93
Koulia	N-6	11				11
Koulia Grove	N-7	26	4			30
Koumasaki	N-8	207			6	213
Latomeion	N-16	24				24
Michalitsi	IF-13	16				16
Ormos Vathy	IF-6	4				4
Oropos	IF-14	8				8
Pogonitsa	IF-7	1				1
Pountas	N-9	23		1		24
Pountas East	N-10	46	5	1		52
Pountas E. vicin.	OS-2	16				16
Preveza-Alonaki	IF-15	3				3
Rizovouni	IF-16	1				1
Skaphidaki	N-17	30	5	6	25	66
Skaphidaki vicin.	OS-4	2				2
Skepaston	N-11	7				7
Spilaion	N-12	170	1			171
Tsouknida	IF-2	1				1
Valanidorrachi	IF-3	3				3
Vassoula	IF-8	1				1
Vlachika	OS-3	1				1
Vouvopotamos	N-13	389	15	2	3	409
Xirolophos #1	N-14	39				39
Xirolophos #2	N-15	123	3	5		131
Total		1,945	53	35	54	2,087
% of assemblage		93.2	2.5	1.7	2.6	

K II/III

The use of a single category to encompass the handmade pottery of the Bronze Age emphasizes the simple technology that binds the local products of two millennia, but tends also to mask a substantial range of variation in raw clays, processing, embellishment, and manipulation of firing. It will be useful to consider the unusual traits as well as the typical ones, for in combination they may provide clues to the options available to potters, and the choices that were made.

Surface and core colors

Reds and reddish browns are the most common surface colors in the coarser sherds. The lightest of these is found at about 5YR 6/8 (reddish yellow), and the darkest 5YR 3/4 (dark reddish brown). Quite often, the exterior surface has two merging colors, a consequence of the conditions of firing or of post-depositional discoloring. In those examples, a combination of oranges (5YR 5/8 yellowish red) and reds (2.5YR 5/8 red) is prevalent. Fewer examples exhibit black clouding regions on a red surface. It is not

uncommon for the medium and even large coarse vessels to have black, smoothed interior surfaces. This phenomenon is explained above as an intentional manipulation of the surface to reduce permeability and thus leakage of liquids during storage, cooking, or serving. An interesting variation found in the coarse pottery is a greenish exterior surface (10YR 6/6 brownish yellow). The interior surface is either the same as the exterior or black. Though not numerous, the greenish sherds are found at many sites across the study area. Much rarer on the coarse vessels are gray to black exterior surfaces.

Almost all medium to large vessels have thick, dark gray to black cores, indicating incomplete firing of the interior of the clay body. The cores tend to have somewhat diffuse edges. Thin margins between the core and surface have the color of the surface or a slightly darker, intermediate color. It is highly unusual to have a narrow core with thick surface and marginal zones. There are two main deviations from the norm: cores that have fired to a red color with browner margins and surfaces, and vessels with uniform firing color from surface to core. The latter group consists primarily of fully oxidized, red fabrics, but there are also among the medium to large vessels lesser numbers that are dark gray to black, and a small quantity that are a uniform light gray.

The small K II/III vessels are actually a diverse group that includes at least the following subtypes: 1) those that exhibit all the hallmarks of the K II fabric range, including rough surfaces, incompletely fired cores, and gritty fabrics; 2) copious specimens that exhibit characteristics of both K II and K III; 3) a small number in which interior and exterior surfaces are carefully smoothed or burnished; and 4) those that imitate Minyan shapes (discussed in a separate section below), which usually have smoothed, though rarely burnished, surfaces.

The first subtype possesses the same patterns of surface and core color as the larger K II vessels, demonstrating that small table ware was sometimes manufactured with no effort at special processing or firing (Figure 5.12). The domestic mode of production, as well as the everyday function, explains the lack of special treatment in this table ware.

Numerically the second subtype, combining traits of K II and K III, is by far the most common, representing the broad middle range of the K II/III continuum. The most typical color combination is a black, smoothed interior surface and an exterior surface whose color may be any of those known from K II. The treatment of the interior surface again reflects an interest in decreasing permeability. It is usual to find rather thick, dark firing cores in the middle-range sherds, even those from small vessels.

The third subtype comprises the finer vessels that correspond to the canonical description of category K III. The interior and exterior surfaces of these sherds are dark-



Figure 5.12 K II/III small tableware rims showing characteristics of forming and firing indistinguishable from those of larger, coarser (K II) vessels.

colored, ranging from dark brown to dark gray and black. Surfaces are smoothed, and occasionally burnished. The quality of the surface treatment is highly variable: most sherds are matt or have a slight sheen, and even the few burnished examples do not attain the lustrous finish seen in Minyan and other dark-surfaced wares in southern and central Greece. No more than a dozen sherds in the survey collection preserve true burnished surfaces. The fabric of the canonical K III sherds is finer and better-fired, with the result that thick core firing zones are absent or much reduced. Most often, the entire section is of a uniform color, suggesting that a certain firing temperature was maintained long enough to bake the full thickness of the vessel. Even the finer examples sometimes exhibit incompletely fired cores, however.

The differences in surface and core color noted in the K II/III pottery from the Nikopolis Project surface collections may be attributed to several factors. Two basic sources of variability are the composition of the raw clay and the characteristics of firing (Rice 1987: 333–336, table 11.1). Impurities in the raw clay, notably iron compounds and organic matter, play an especially important role in coloring low-fired pottery. For example, iron oxides contribute red colors when fired, while partially fired organic material leaves the black deposit typical of the cores of K II/III vessels. In the absence of oxygen, iron compounds may be reduced (as FeO rather than Fe₂O₃) to produce dark surface colors. The duration, temperature, and atmosphere of firing are variables that interact with, and may modify, the effects of the clay's constituents. In a reducing atmosphere, for instance, iron compounds may not oxidize to red colors. Or if high temperatures are attained and maintained, organic material will be burned away, eliminating the dark core zone. The interactions are complex, the variables many, and the range of possible outcomes broad. The overwhelming evidence for low-temperature firing of K II/III pottery offers a reasonable assurance that many clays mined for pottery manufacture were rich in iron and organic matter. On the other hand, deliberate choice must also have been exercised to obtain desired effects. Once some experience with various clay sources was gained, potters may have selected clays for

the colors they yielded upon firing. Dark surfaces may have been achieved by creating reducing conditions during firing, or by covering vessels with ashes or dung.

Another variable affecting surface color is the post-depositional environment. Wardle (1972: 208–209) places considerable emphasis on the soil matrix as a strong determinant of the preserved surface color. It appears from his short description that he believes most vessels of K II/III type to have been originally dark in color, but rendered muddy brown, or red- or yellow-ochre by soil staining. I concur that many of the survey sherds have been discolored to a muddy brown, but I find the widespread red to reddish brown surface colors in the surface assemblage to be close to the original. The most compelling evidence are the well-defined zones that are apparent in fresh section breaks, which I believe faithfully record partial oxidation rather than merely partial staining. This color scheme is found consistently in all sorts of soil matrices, and appears too uniform to be the work of leaching. I do not discount Wardle's observation, for indeed regional variation may account for the difference, as the assemblages available to him came mainly from central and northern Epirus. Moreover, it is possible that a comparison of Munsell colors, if available, might expose some of the divergence as semantic; this is particularly plausible for the convergence of reds and browns and their associated nomenclature.

I do not think that chronology can be demonstrated as a factor influencing the colors of K II/III ware. There is no solid evidence in the chronological data available from the surface survey, or for that matter from excavated sites in Epirus, that specific surface and core colors have any chronological significance. There is some indication, however, that Early Iron Age containers resembling K II types, with thick walls and plastic decoration, were more often red and more often fully oxidized than previously (at Vitsa: Vokotopoulou 1986: 355; at Krya: K. Zachos, personal communication, 1995). This pattern is not unexpected, given the advances in ceramic technology that arrived in Epirus at the transition from Bronze Age to Iron Age. No such development can be detected earlier in the Bronze Age on present evidence.

Collectively, the colors of the Nikopolis Project sherds approximate those known in the rest of Epirus, and in their scope express the interrelationship of the natural properties of the materials used, the technology applied to manufacture, and the sensibilities of potters and users of their products.

Inclusions

The inclusions of K II/III fabrics vary widely in quantity and type. They include the naturally occurring constituents of the raw clay, and in many cases material deliberately added as temper (but see the disclaimer below regarding the identification of temper). The observations made about

them here derive from macroscopic inspection only; a small group of K II/III sherds collected for petrographic inspection has not yet been analyzed.⁵

The larger, thicker-walled vessels tend naturally to have coarser fabrics as a consequence of lesser interest in refinement and the need for strength to withstand firing. The most notable inclusions in coarser sherds are chunks of rock, on average 2–6 mm on the longest axis. These rock fragments often protrude from the surfaces of the sherd, emphasizing their coarseness and the lack of effort at embellishing large utilitarian containers. A variety of other inclusions is found generally in the size range of <1 mm to 2 mm. Most sherds contain small to very small white inclusions that are mainly calcite and other forms of calcareous detrital material. Quartz and quartz-bearing rock fragments such as sandstone can also be discerned with the naked eye. Other common inclusions in this size range have been described elsewhere as “particles of harder clay” (Vokotopoulou 1986: 355); these are most likely lithified detrital sediments such as mudstone and siltstone, or textural concentration features such as clay pellets (Whitbread 1986). Lithified sediments are typical in a sedimentary environment dominated by calcareous rock, which characterizes southwestern Epirus, and should be seen as natural constituents of the clay rather than temper. Some common inclusions of clays in Greece appear on the other hand to be rare. Micaceous macroscopic size are uncommon, possibly indicating an absence of metamorphism in local geology. Shell of macroscopic size is also absent.

Temper, materials deliberately added to the clay body to enhance its working or firing properties, should not be confused with natural constituents of the clay. The neutral term *inclusions* encompasses both naturally occurring particles and material added purposely. Rock fragments and shell are examples of inclusions that may occur naturally in clays, but are often considered temper without real justification. On the basis of macroscopic inspection alone, I find the addition of large rock fragments to coarser vessels in the Nikopolis Project collection to be the only immediately compelling case for tempering. The primary evidence lies in the sharply bimodal distribution in inclusion size evident in many sherds in which these large rock fragments occur. These examples combine chunks of rock measuring up to 6 mm on their longest axis and tiny, white calcite or quartz inclusions less than 1 mm across. This sort of distribution is unlikely to result from natural processes, especially since it seems to occur systematically in certain types of vessels only. The presence of rock temper in these large vessels is most easily explained by the need for strength in firing and in subsequent use for cooking and storage. Although tempering of other classes of pottery seems likely, this will be best explored through petrographic examination and other techniques.

Vessel elements and shapes

The fragmentary nature of the pottery collected from the surface limits the potential for reconstructing whole shapes accurately, but some shapes could be recognized or reasonably deduced from “diagnostic” features preserved in sherd form. The elements of a vessel that are considered potentially diagnostic of shape are the rim, the base, and the handles or lugs, i.e., all those that are not strictly body sherds. These are sometimes called “feature sherds.” A broader definition of diagnostic would include those attributes that indicate date or type, such as painted, plastic, or incised decoration, and other characteristic treatments or effects. Additional attributes may be diagnostic in given local or regional contexts. Of the 1,862 K II/III sherds analyzed,⁶ approximately 300 (16.0%) were identified as feature, i.e., non-body, sherds (Table 5.3). This group is dominated by handles (228); rims are a distant second (51), followed by quite small quantities of bases (17) and lugs (3). It is not surprising that the thick, robust handles of large, coarse pots survive best. The scarcity of rims finds no easy explanation, however, since virtually all of them derive from large, open vessels, on which rims occupy a greater surface area relative to those of other shapes. By contrast, Dakaris excavated over 500 coarse ware rims at Dodona. The small number of base sherds can be explained in part by the likelihood that fragments of rounded bottoms often could not be distinguished from curving body sherds of globular vessels. The extreme rarity of lugs may indicate that they were little used, although a few lugs may have been mistaken as worn-away handles. A similar scarcity of lugs (18) prevailed in the Bouleuterion deposit.

Many feature sherds offered little help in identifying whole vessel shapes, primarily owing to their fragmentary state. The rims and bases are most diagnostic, but many handles are strongly indicative of certain shapes, and body sherds, particularly those that have notable curvature or carination, are also useful. The most common shapes that can be recognized among the sherds are deep pithoi or pithoid jars, spherical and hemispherical bowls, single-handled globular cups, and small conical cups. A few closed shapes are represented, including necked jars and possibly amphoriskoi.

DEEP PITHOI OR PITHOID JARS

The largest storage jars are wide-mouthed pithoi with rim diameters in the range of 18–28 cm, body walls normally more than 12 mm thick, and flat or truncated conical bases. Most of the extant rims from this shape are upright and plain (Figure 5.13a–c), sometimes preserving evidence of a gradual spreading of the vessel wall. Several thick-walled body sherds come from pithoi; the walls can be over 20 mm thick. One flat concave base probably comes from a pithoid jar (Figure 5.13e), as does a raised base (Figure 5.13f) that is similar to those found on pithoi at Thermon (Wardle 1972: fig. 58: 202, fig. 59: 203).

BOWLS AND CUPS

Bowls and cups form the largest group of sherds for which a vessel shape can be identified. I shall discuss them together because it is often difficult to distinguish bowls from cups on the basis of small fragments. Three basic bowl shapes can be distinguished: shallow hemispherical bowls, deeper spherical bowls, and conical bowls. Of the cup shapes, one-handled globular cups and small conical cups are present.

Shallow hemispherical bowls are reasonably well represented among sherds with vertical plain or thickened, and spreading rims (Figures 5.13d, g–h, 5.17). The orientation of these rims shows flaring walls, and diameters ranging from 10–34 cm demonstrate that such bowls came in a variety of sizes. Shallow bowls were found, although not apparently in large quantities, at Dodona (Wardle 1972: fig. 130: 626, 627; Evangelidis 1935: fig. 1:11). One plain rim from an incurving bowl is also present (Figure 5.14a).

Deep spherical bowls and deep, single-handled cups are similar shapes that can be discerned in a substantial number of rim sherds, although separating them is often difficult or impossible. In the surface collection, several rim sherds probably belong to small, straight-sided or slightly globular cups with everted rims (Figures 5.14c–d, 5.18: right). This shape is well known from discoveries of whole vessels at Elaphotopos and Mazaraki (Wardle 1972: fig. 128: 580–588), Dodona (Evangelidis 1935: pl. 2α: 3), and Kastritsa (Dakaris 1952: figs. 6 and 7), and, within the survey area, in a nearly complete example from Ephyra (Dakaris 1975a: pl. 127β). Other rims from larger vessels with mouth diameters of 20–26 cm probably belong to deep spherical bowls with everted rims (Figures 5.14f–g, 5.18: left). This type of bowl is common in the K II/III repertoire, and illustrated examples show considerable variation in the details of the shape (Wardle 1972: fig. 129: 598–609; Andreou 1987: pl. 177α).

Small conical cups and larger conical bowls may be represented in small numbers by vertical or slightly everted rims (Figures 5.14h–i, 5.15a). Several fragmentary conical cups and bowls are illustrated from Dodona (Evangelidis 1935: pl. 2α: 3; Wardle 1972: fig. 130: 616–625). The conical shapes grade into globular, and the rim shapes and orientations are similar enough that the full outline of the body cannot be determined with certainty.

CLOSED SHAPES

A few sharply everted rim sherds come from necked jars (Figures 5.15b–c, 5.19, 5.20: left) that are similar in shape to a whole vessel from Dodona (Dakaris 1967a: pl. 33) and several in fragmentary form from the same site (Evangelidis 1935: fig. 3: 9, 20, 28; Wardle 1972: fig. 130: 631). Similar necked jars have been found in Late Bronze

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Table 5.3 Sherd thickness data, Nikopolis Project surface survey.*

<i>Site</i>	<i>Site no.</i>	<i>Fine</i>				<i>Medium</i>				<i>Heavy</i>				<i>Total analyzed</i>
		H	B	R	BS	H	B	R	BS	H	B	R	BS	
Alonaki Prom.	N-1						2			1				3
Cheimadio	N-18						9	1		1				11
Ephyra-Nekyo.	E-3		9		1	1	234	10	2	57	81	3	1	409
Galatas	N-19		1			2	3	1		1	11		1	20
Kastriza	N-3	1	3	1		8	78	2	3	9	8			113
Kastriza off-site	OS-1						3							3
Kiperi	E-20		1			1	8			7	6			23
Kokkinopilos	E-8						2				1			3
Koroni	N-4		1				21			2				24
Koronopoulos	N-5		3			1	84		3	3				94
Koulia Grove	N-7					1	20	4		3	10			38
Koulia	N-6						9							9
Koumasaki	N-8		1	1		7	150	2		14	17			192
Latomeion	N-16						12			2	14			28
Oropos	IF-14						5			1				6
Pountas	N-9						19			5	1			25
Pountas East	N-10					1	27	1		2	10			41
Preveza-Alonaki	IF-15						3							3
Rizovouni	IF-16						1							1
Skaphidaki	N-17		8	2			44	7	1	3	5			70
Skaphidaki off-site	OS-4						2							2
Skepaston	N-11						5							5
Spilaion	N-12		3			2	67	1		28	49		2	152
Tsouknida	IF-2						1							1
Valanidorrachi	IF-3						3							3
Vlachika	OS-3						1							1
Vouvopotamos	N-13		13			4	297	11		27	56		1	409
Xirolophos 1	N-14		7				35							42
Xirolophos 2	N-15	1				4	84	2	1	18	18	2	1	131
<i>Total</i>		2	50	4	1	4	122	4	10	18	287	5	6	1862
<i>Percentage</i>		3.1				71.0				25.9				

*Key: H = handle; B = body sherd; R = rim; BS = base. Thickness criteria: fine < 5 mm; medium 5–12 mm; heavy > 12 mm.

Age contexts (as they were at Dodona) on Kephallenia and Ithaka (Souyoudzoglou-Haywood 1999: 75–76, 106). Some of these sherds may belong to amphoriskoi, which are illustrated from Dodona (Evangelidis 1935: pl 7α: 1–6) and the Kiperi tholos (Papadopoulos 1981b: pl. 6:1). A deep, wide-mouthed jar known from complete examples at Dodona (Dakaris 1967a: pl. 33), as well as among rim sherds at Dodona and Elaphotopos (Wardle 1972: fig. 130: 634–637, fig. 135: 690), is manifest in at least one rim sherd from the survey assemblage (Figures 5.15e, 5.21). One everted rim belongs to a wide-mouthed jar of smaller diameter (Figure 5.13b). Finally, two thickened incurving or vertical rims are reminiscent of closed vessels profiles of EH II date in southern Greece (Figure 5.15f–g; Pullen 1995: figs. 25–27).

Rims

The rim sherds with their attached body segments offer the clearest indication of the diameter and shape of the original vessel, so it is a pity that very few were preserved. Although too few to bear quantitative characterization, the ones that did survive demonstrate significant variety in shape, thickness, and orientation. A striking pattern is the abundance of everted rims in the open shapes, reflecting, it would appear from profiles that have been illustrated, predominance of that rim form on K II/III pottery throughout Epirus (Evangelides 1935: figs. 2, 3; Wardle 1972: figs. 128–137). A few examples of plastic decoration below the rim are preserved, and in a few cases the top of a rim was impressed.

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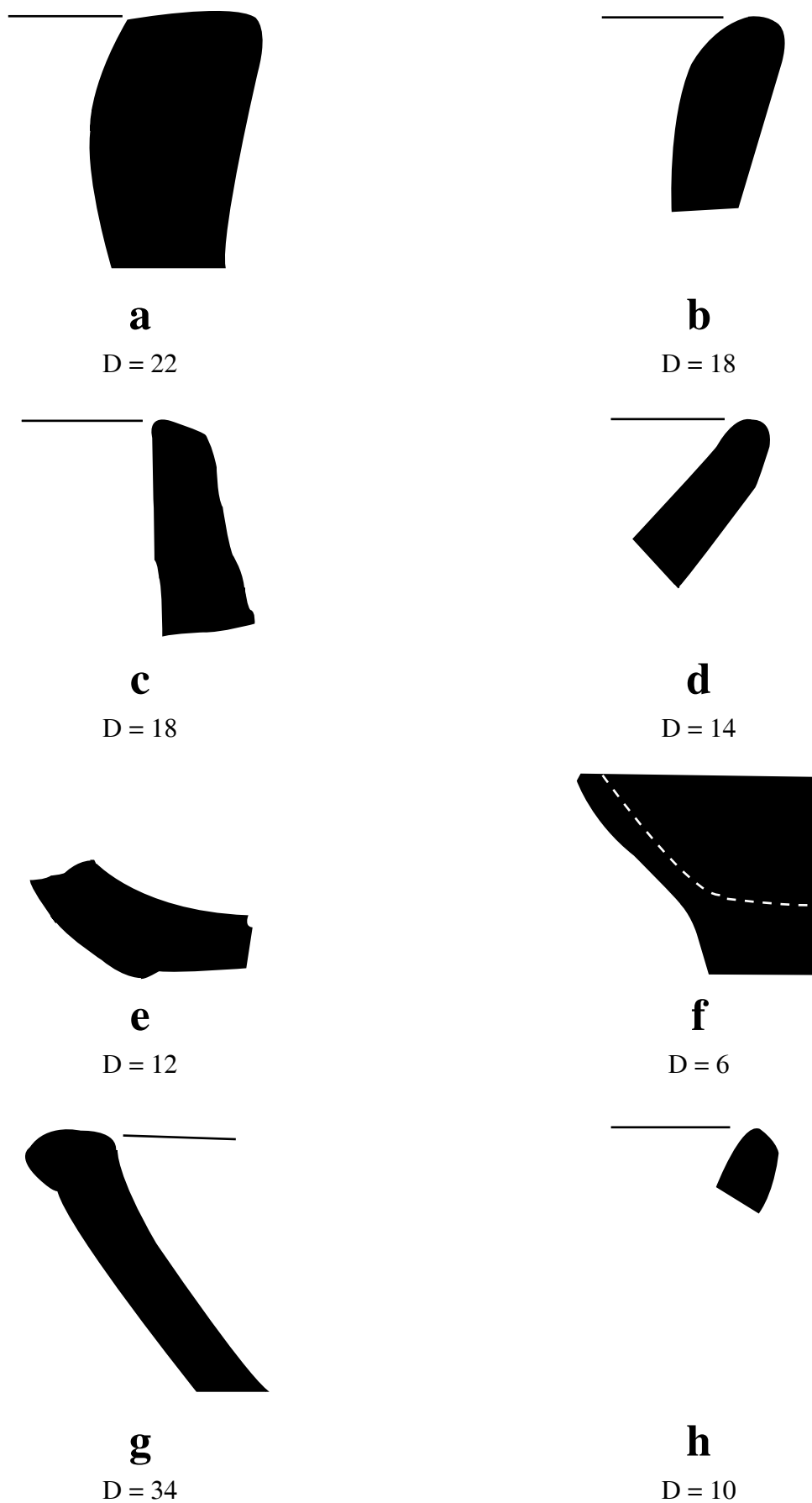
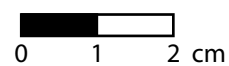


Figure 5.13 Nikopolis Project: K II/III sherd profiles. Redrawn by J. Di Giustini.



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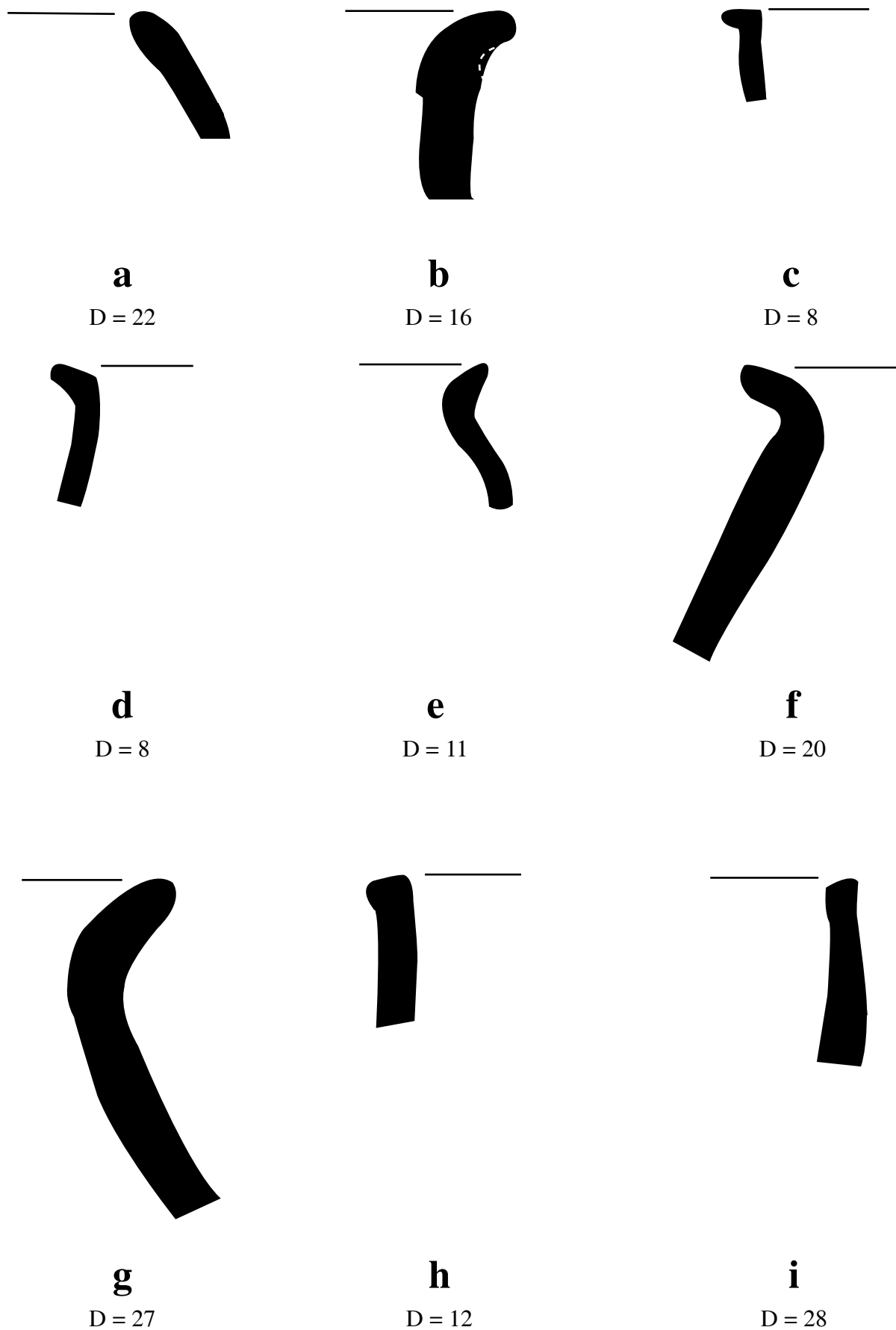
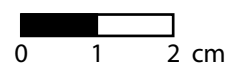


Figure 5.14 Nikopolis Project: K II/III sherd profiles. Redrawn by J. Di Giustini.



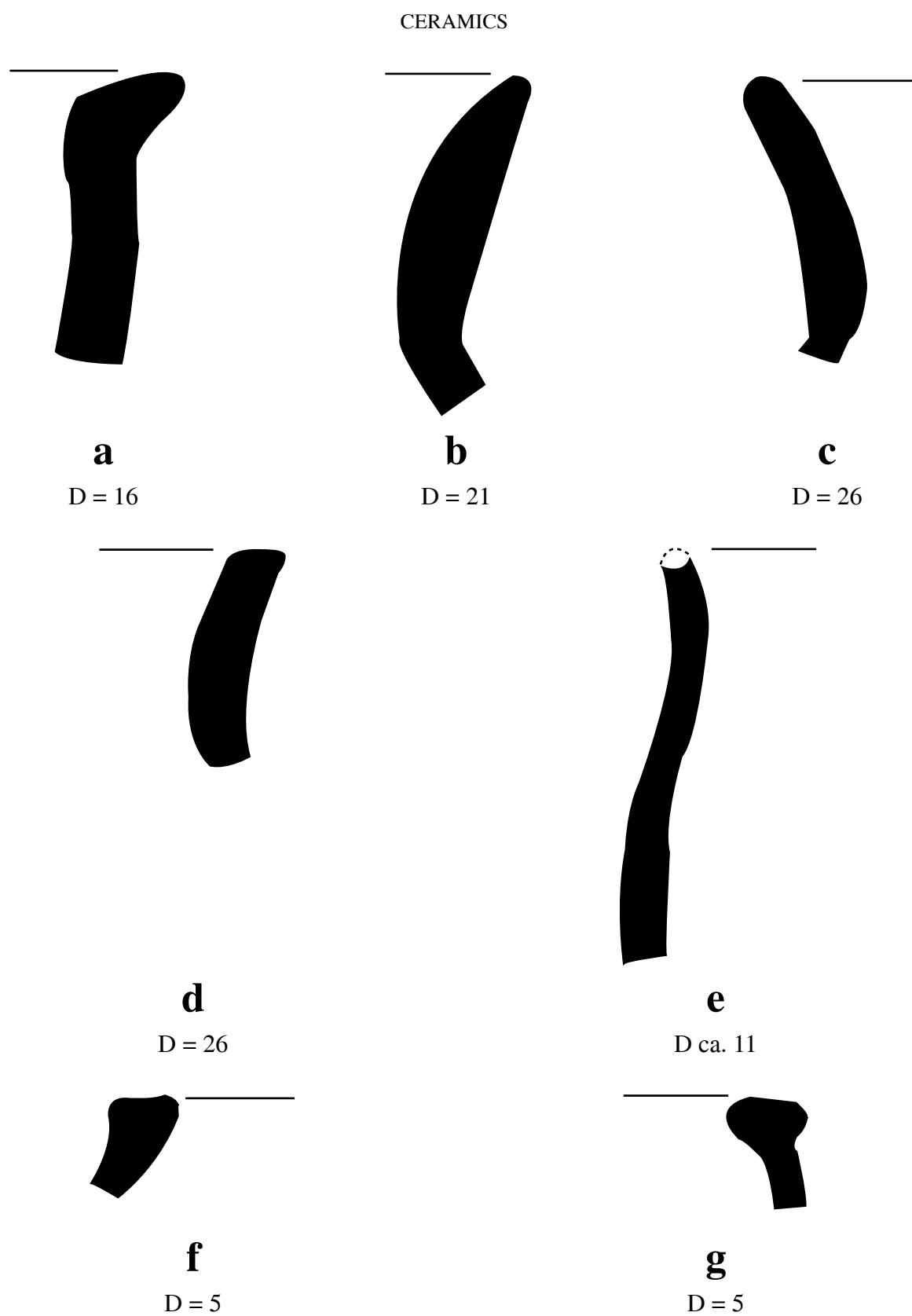
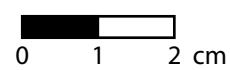


Figure 5.15 Nikopolis Project: K II/III sherd profiles. Redrawn by J. Di Giustini.



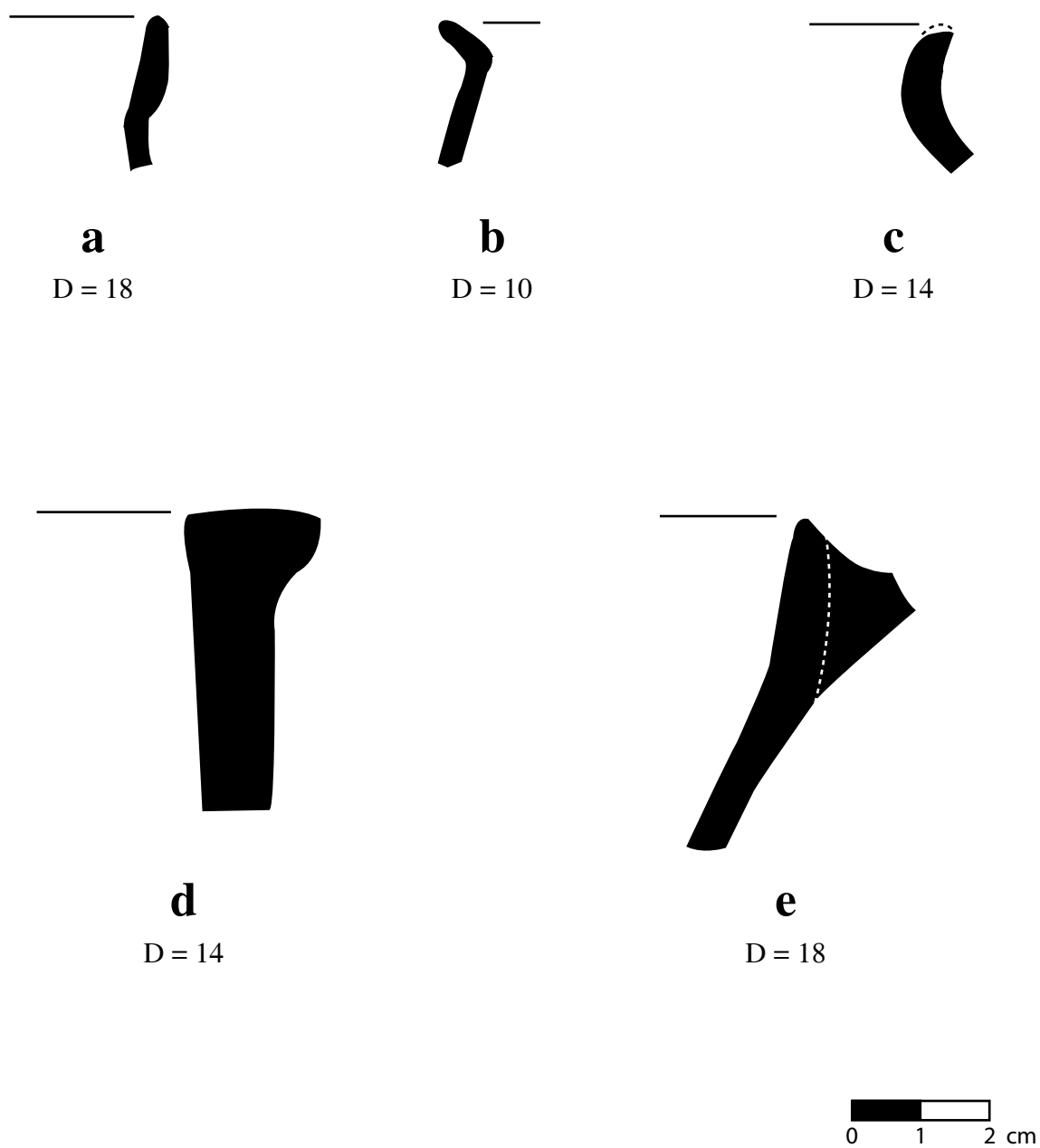


Figure 5.16 Nikopolis Project: Orange-red sherd profiles. Redrawn by J. Di Giustini.

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Figure 5.17 K II/III bowl rims. Photography courtesy Nikopolis Project.



Figure 5.18 K II/III bowl and cup sherds. Photograph courtesy Nikopolis Project.



Figure 5.19 Rim from necked jar. Photograph courtesy Nikopolis Project.



Figure 5.20 Rims from necked jars. Photograph courtesy Nikopolis Project.

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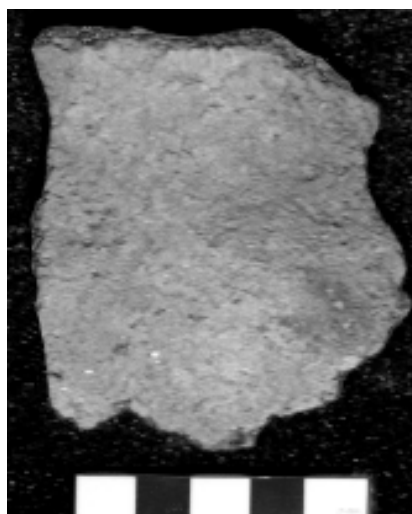


Figure 5.21 Rim of wide-mouthed jar.



Figure 5.22 K II/III handles. Photograph courtesy Nikopolis Project.



Figure 5.23 K II/III sherd preserving rim, handle, and body. Photograph courtesy Nikopolis Project.



Figure 5.24 K II/III sherd as in Figure 5.23, profile view. Photograph courtesy Nikopolis Project.

Handles

Of the diagnostic elements, only handles were found in numbers sufficient for statistical characterization. An initial classification was made according to two criteria: vertical or horizontal placement, and general heaviness. The latter attribute was measured by Wardle's standard for thickness: fine = <5 mm; medium = 5–12 mm; and heavy = > 12 mm. Using these parameters, the following results were obtained from 228 handle sherds: 80% of the handles are vertical, and 20% horizontal. Heavy vertical handles account for 70% of the total, and medium vertical, heavy horizontal, and medium horizontal for about 10% each. These data conform fairly well to those obtained by Wardle (1972: 208, 215–216) from the Bouleuterion coarse ware. He

reported that over 60% of the handles are vertical, and 26% horizontal. For all the handles together, the heavy and medium categories account for approximately 45% each, while 8% fall into the fine category. For the Nikopolis survey material, those figures are 80.7% heavy, 18.4% medium, and 0.9% fine. The variance in the two assemblages may be explained in part as the difference between excavated and surface contexts. One would expect a bias in surface material favoring survival of the heaviest, most robust pieces, and disintegration of the smaller, finer handles. Wardle noted that the thickness results underscore the typical heaviness of the handles relative to the vessels on which they were placed, a conclusion equally apposite for the specimens collected in survey (Table 5.3). Thick, strong handles were possibly desired for durability on pots

CERAMICS

that were intended for intensive use, and for convenience in hanging on pegs or nails.

Vertical handles viewed in section are found in a few main shapes. The most numerous are thickened strap handles found in all thicknesses (Figure 5.22). Strap handles are wide and flattish in section, and are likewise found in many thicknesses. Somewhat less common are thin, very flat ribbon handles, which are confined to medium and fine vessels, most likely for reasons of strength. The handle shapes form a continuum from round to ribbon, and thus a given handle may fall somewhere in between; furthermore, two sections of a single handle may have different shapes depending on their location. The variable shape and thickness along the length of many handles mirrors the asymmetry noted in whole pots of the Epirote handmade pottery tradition.

The heaviest vertical handles fall mainly between strap and thickened strap in section; four to five of these come from extremely large, heavy storage vessels. With the exception of one or two, they all have reddish surfaces and dark gray to black firing cores. Several of the medium vertical group are strap handles from globular or conical cups, including a well-preserved sherd with an entire handle, extant rim, and much of the wall profile (Figures 5.23, 5.24). At least eight medium handles of all shapes preserve attachment plugs that were pushed through the vessel wall in the leather-hard stage, and then smoothed into the interior vessel surface (Figure 5.22). The medium handles are also dominated by reddish to brownish fabrics with dark firing cores. The finer members of the vertical group, those less than 12 mm thick, were placed on small vessels occupying the full K II/K III spectrum. Small vessels were in fact manufactured with all the attributes associated with coarse K II pottery; one variation in small, thin-walled vessels is a light yellowish brown surface (10YR 6/4) over a black core, seen at several sites and represented by at least three handles. Other vertical handles with or without attachment plugs preserve remnants of the smoothed, black surface of the inner vessel wall. Most of the finer handles are strap or ribbon handles (Figure 5.25).

Horizontal handles are mainly of the round loop variety (Figures 5.26, 5.27), but a flattened upper surface creates a nearly triangular section (“trianguloid”; Rutter 1995: ill. T-5) in many medium to heavy handles (Figures 5.28, 5.29). Some of the former type are placed obliquely upward rather than at a 90° angle to the vertical axis of the vessel. Nearly all horizontal handles derive from large, open vessels with reddish surface colors and thick, black firing cores.

Bases

Bases are too few (15) to characterize meaningfully. A few have been associated with shapes in the discussion above. It can be said that all K II/III bases in the survey assemblage are flat or nearly so; technically, the group comprises flat, hollowed, and raised types. In the Bouleuterion deposit too, far fewer bases were encountered than would be



Figure 5.25 Handles from small K II/III vessels.

expected, and in both cases the inability to identify round bottoms provides a partial explanation (Wardle 1972: 214–215). Non-flat bases are also rare in the Bouleuterion assemblage, but some types not recognized in the survey pottery include ring bases, pointed conical bases, and perhaps a tripod leg.

Decoration

Approximately 20 sherds in the Nikopolis Project survey collection bear plastic decoration, primarily in the form of finger impressions and incisions placed on applied clay bands, or made directly onto the vessel surface. This small group conforms closely to the repertoire of Epirote plastic decoration, but presents a very limited sample thereof. One can get a good idea of the form and scope of this kind of decoration from the published drawings and photographs of sherds from Dodona and other sites in Epirus (Evangelidis 1935: pls. 7β, 8, 9α; Dakaris 1951: figs. 2, 5; Wardle 1972: figs. 130, 132–137). The most common form in the survey assemblage is the finger-impressed tainia band, which is executed with widely varying degrees of skill (Figures 5.30–5.32). These are found on rim and body sherds; the position and orientation on the vessel, as far as they can be determined, seem to follow the widespread pattern of placement horizontally below the rim. Vertical impressed bands of the type known elsewhere in Epirus are not positively attested. A small number of incised plastic bands were found (Figure 5.33). On several sherds, the impressions or incisions were made directly to the vessel surface instead of onto a raised band. One of these is impressed with teardrop-shaped gouges beneath the rim (Figures 5.14b, 5.34); on another, the top of the rim bears short, roundish impressions (Figure 5.35). Clay lumps were detected on two sherds, in both cases accompanied by traces of a raised, impressed band.

The scarcity of plastic decoration may be accounted for in a couple of ways. Certain evidence indicates that post-depositional wear is extreme once sherds are exposed on the surface, with the result that features in relief may be worn away entirely. Many of the applied bands show clear

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Figure 5.26 Horizontal handle from K II/III vessel, top view. Photograph courtesy Nikopolis Project.



Figure 5.27 Horizontal handle as above, side view.



Figure 5.28 K II/III trianguloid handle.



Figure 5.29 K II/III trianguloid handles. Photograph courtesy Nikopolis Project.

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Figure 5.30 K II/III plastic decoration. Photograph courtesy Nikopolis Project.



Figure 5.31 K II/III plastic decoration.



Figure 5.32 K II/III plastic decoration. Photograph courtesy Nikopolis Project.



Figure 5.33 K II/III incised decoration.



Figure 5.34 K II/III with deep gouge-like impressions.

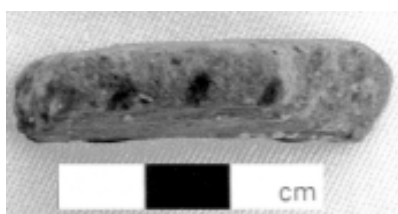


Figure 5.35 Top of K II/III rim with impressions.



Figure 5.36 K II/III fragments with plastic decoration.

signs of reduction by wear, a few becoming barely perceptible as raised features (Figure 5.36). On one sherd, the incised decoration has become so shallow from wear that it has almost disappeared (Figure 5.33). There can be little doubt that this process has reduced the rate of preservation to some degree. A supplementary or alternative inference is that there is regional disparity in the use of plastic decoration; i.e., that such decoration was not applied as often and/or as liberally as in central and northern Epirus. Certainly the proportion of sherds bearing plastic decoration is much higher in the Bouleuterion assemblage (12.3%; 360 decorated sherds) than from the surface survey (1.0%; 20 decorated sherds). Can this difference be entirely the result of post-depositional processes? The possibility cannot be ruled out, for disparities of similar magnitude are noted for rims and bases. Assessing the contribution of regional variability will not be possible until excavated pottery assemblages from southern Epirus are studied and fully published, but some preliminary impressions may be gained from my inspection of a small portion of the excavated assemblage from Ephyra.

My perception concerning plastic decoration of K II/III ware at Ephyra is of a limited repertoire of standardized motifs that are repeated over and over again. Most of the plastically decorated sherds derive from coarser vessels, although such ornament is not rare on the finer vases. Applied bands with impressed decoration are common, but almost as abundant are impressions made directly on the surface with a fingertip or by pinching clay together, perhaps to imitate the raised band decoration. Impressed vertical bands sometimes accompany horizontal ones. Incised decoration is infrequent, however, as are clay lumps or pellets. These observations apply to a fraction of the thousands of sherds that have been collected at Ephyra, but I saw nothing to indicate the kind of elaboration and diversity of plastic decoration that are so striking in the pottery excavated by Evangelidis and Dakaris at Dodona. At the latter site, apart from the typical embellishments noted at Ephyra, there are, to name a few, large clay disks applied individually about the vessel exterior; plain bands or coils that vary in height, width, and shape; double lugs; and schemes that combine raised, impressed bands, clay lumps, and random finger impressions on the surface of a single sherd. The motifs are far more lavish, and their conception extends to the unconventional and idiosyncratic.

The contrast may demonstrate real regional variability within Epirus, which could be explained in the following way. It might be imagined that Dodona was an important community in contact with innovative influences; however, comparable decoration is not found in regions surrounding northern Epirus, including southern Albania and Macedonia, and therefore the possibility arises that the source of innovation was centered at or near Dodona itself. Variation would normally be expected to be greatest at the source, and in southern Epirus we may be seeing the imitation of certain standard, easily reproducible forms. Only more data will lead us to the true patterns and their causes.

Conclusions

The K II/III assemblage from the Nikopolis Project survey conforms fairly closely to those from the rest of Epirus. There is a moderate degree of divergence introduced by differences in local raw materials, nonuniform domestic production, and the vagaries of differential preservation. A potentially significant variation is the simplicity and redundancy of plastic decoration in southwestern Epirus relative to the elaborate and diverse applications evident at several sites in central and northern Epirus. Whatever the differences, there can be no doubt that the coarse pottery is a characteristically Epirote product. Wardle (1977: 168–171) has shown that the local pottery of Thermon, and probably of the whole of Aitolokarnania, is unlike K II/III; the local wares of the Ionian Islands and Kerkyra are more similar (cf. Red Ware and related fabrics), but also include types that are never found in Epirus (Wardle 1977: 187–190). Nor is plastic decoration common in Albanian Bronze Age pottery. The Bronze Age levels at Konispol Cave in Albania yielded two fabrics, in moderate quantities, that have close parallels in the Nikopolis Project collection: a very coarse, undecorated fabric of red color with a thick black firing core; and a hard-fired buff fabric that is provisionally identified as provincial Mycenaean in southern Epirus. A distinctive, light gray fabric known in Albania is also possibly represented in a few sherds obtained in survey.

K III Minyan-Inspired Pottery

A small percentage of the surface sherds can be assigned to vessels that mimic the shape and appearance of Minyan vessels (Table 5.2). This group combines several attributes of the finer K II/III specimens—dark monochrome surfaces that are usually smoothed and rarely burnished, more complete firing, and a finer fabric—with vessel shapes that imitate well-attested Minyan forms, particularly the late Middle Helladic rounded cups, deep spherical bowls, kantharoi, and goblets that continued to be used into the Late Helladic period (Mountjoy 1993: 31–39). As noted above, some coarser vessels were manufactured in these shapes without concern for replicating the surface treatment. The prototypes for Epirote pseudo-Minyan were probably imitations themselves, from Albania (Bejko 1994: fig. 4), or less likely the Ionian Islands (Lefkas and Kephallenia, Wardle 1972: figs. 32, 33, 35: 34–37, 37: 50–53, 38: 54) and Aitolokarnania (Thermon, Wardle 1972: figs. 51, 52, 55: 182, 68: 248).

This small group of just more than 50 sherds forms part of the finer end of the K II/III spectrum that would otherwise be considered canonical K III, but has been isolated because the association with Minyan shapes offers the potential for broad dating in the late Middle Helladic or later. That *terminus post quem* offers little assistance for precise dating, but is significant for getting a general fix on surface and other unstratified material, which, in the not-uncommon absence of datable imports, cannot otherwise be assigned to any particular phase of the Bronze Age.

Among the sherds there are a few rims from kantharoi or spherical bowls (Figures 5.14f–g, 5.18: left, 5.20) and smaller globular cups (Figure 5.18, right). Most of the rest are body sherds that join with the rims, or are curved or carinated in a way that strongly suggests one of the Minyan-inspired shapes. Perhaps five of these preserve traces of true burnishing. There are handle and base fragments that may likewise belong to such shapes, but they were not included because their identification is uncertain.

With respect to attributes other than shape—raw clay, inclusions, firing, and surface treatment—the imitations of Minyan ware are indistinguishable from the finer K II/III vessels. I have emphasized that the new shapes were incorporated into the existing suite of processing and finishing methods. The fact that true Minyan pots of the fine, lustrous-burnished class are found in moderate quantities in the Ionian Islands and Aitolokarnania, but are virtually unknown in Albania and Epirus, suggests that the impetus for copying Minyan forms came from the north, and not by trade from the west or south; otherwise, we might expect at least a few examples of the genuine article.

Orange-Red Wares

None of the fewer than 40 sherds that can be assigned unquestionably to the series of late prehistoric orange-red fabrics (Table 5.2) preserves traces of painted decoration, and thus no certain evidence of matt-painted ware was found. It is probable that the true proportion of orange-red pottery was moderately higher, for the resemblance to historical fabrics, notably of the Hellenistic period, is often sufficient in fragmentary, unstratified material to make identifications equivocal. With the exception of a few pieces, the surface assemblage consists of sherds that may be attributed to the general class of orange-red, undecorated vessels that accompanied the two phases of matt-painted pottery in space and time. In spite of the meager size of the sample, the surface sherds demonstrate some of the variability in color, firing, and vessel size and thickness that characterizes the excavated orange-red pottery.

Two main divisions of the orange-red sherds can be made on the basis of surface appearance: 1) a group with a powdery red to orange surface that rubs off easily onto the hands; and 2) a group with an orange to red surface that is smooth but not powdery.

Group 1: Powdery red to orange surface

This group is represented by sherds from small and large vessels, and includes several rims (Figures 5.16, 5.37, 5.38) and handles (Figure 5.38). The colors of the surface cluster at 5YR 6/8 reddish yellow, shading in some examples to 2.5YR 6/8 light red or 5YR 5/8 yellowish red. The firing cores range in color from slightly bluish gray (10YR 7/1 light gray) to gray (2.5Y 5/0 gray), and tend to be thicker in heavier vessels and thinner in small vessels. The separation of the core zone from the surface and margin is

sharp to somewhat diffuse; the finer sherds have more diffuse margins. Uniform firing color through the section is noted in a significant minority of the sherds. Group 1 vessels are well fired to a hard surface. Very small, rare inclusions are visible on the surface of most sherds, but are difficult to detect in the section. They are composed mainly of tiny, white calcite or other calcareous grains; in some sherds, micas are present in tangible quantity (up to ca. 7.0% of the groundmass).

Several vessel shapes can be inferred from the diagnostic sherds. Larger shapes are represented in a broad horizontal rim that may come from a pithoid vessel (Figures 5.16d, 5.37), and the rim and handle attachments of a deep conical bowl that may imitate Mycenaean shapes of LH IIIC Middle and Late (Figures 5.16e, 5.38; cf. Mountjoy 1993: 107: 290, 113: 319). Two heavy horizontal loop handles with flattened top surfaces find a close parallel at Dodona (Figure 5.39; cf. Wardle 1972: fig. 127: 569). Among the smaller shapes there is the flaring rim of a necked jar or amphoriskos (Figure 5.16c), a shape that is well attested in orange-red fabrics at Dodona and Vitsa, and a number of fragments of vertical handles that may belong to a variety of shapes, such as bowls like the ones found at Dodona (Wardle 1972: fig. 126: 552, 553, 557–559), or the many kantharos, jar, cup, and amphora shapes illustrated from Vitsa (Vokotopoulou 1986).

The powdery surface recalls the later phase of Northwestern matt-painted ware, and thus may indicate a post-Bronze Age date in the 9th–7th centuries for this group. Such a pattern seems to be indicated at Krya, where the stratigraphy may ultimately allow a relative chronology of both decorated and undecorated orange-red fabrics.

Group 2: Orange-red with smooth, not powdery surface

A smaller group of handmade orange-red sherds is thin- to medium-walled and hard-fired, with surfaces that are smoothed and sometimes coated in a thin slip. The surface colors fall into Munsell reddish yellow (5YR 6/6, 5YR 6/8, 7.5YR 6/6) and yellowish red (5YR 5/6), and there are at least two instances of a fine red slip (2.5YR 4/6–2.5YR 5/6) covering the interior and exterior surfaces. The vessels were smoothed before firing, and on one sherd clear evidence of burnishing is preserved. Skillful firing of Group 2 vessels is demonstrated by their hard fabrics and evidence for control over the atmosphere of firing; the group is evenly divided between those sherds with gray cores and those of uniform color through the entire section. Inclusions are in most specimens rare, the macroscopic grains consisting of tiny fragments of calcite and strands of mica, although in a few coarser sherds larger rock inclusions are visible.

A limited number of shapes are recognizable in five or six feature sherds. A thin-walled, everted rim sherd yielding a diameter of around 10 cm may come from a small cup or amphoriskos (Figures 5.16b, 5.40). Another rim is coarser,

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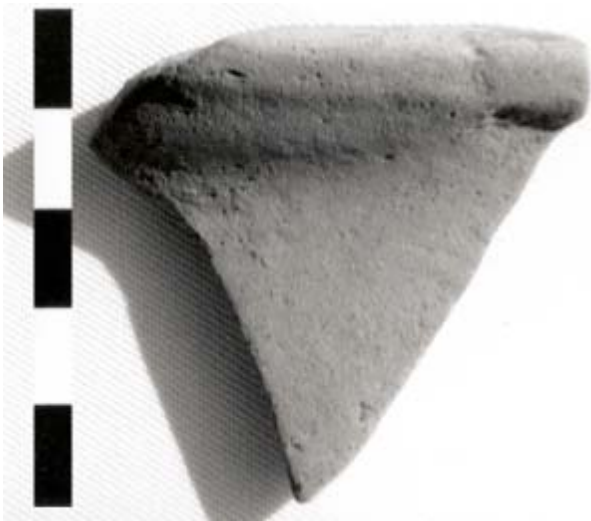


Figure 5.37 Orange-red Group 1 rim of pithoid vessel (?). Photograph courtesy Nikopolis Project.

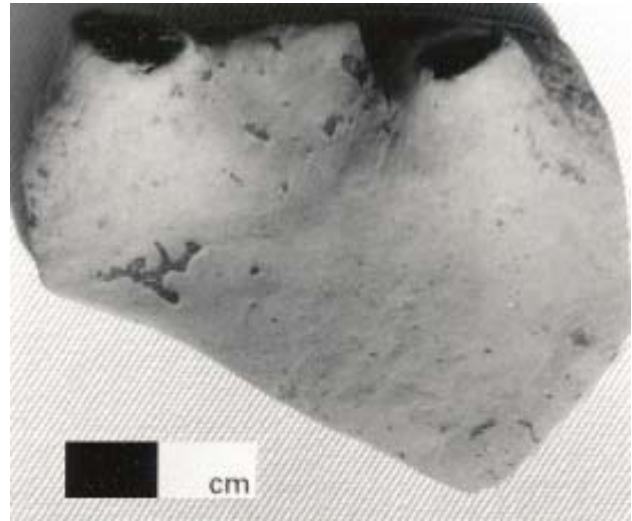


Figure 5.38 Orange-red Group 1 rim and handle from deep conical bowl. Photograph courtesy Nikopolis Project.

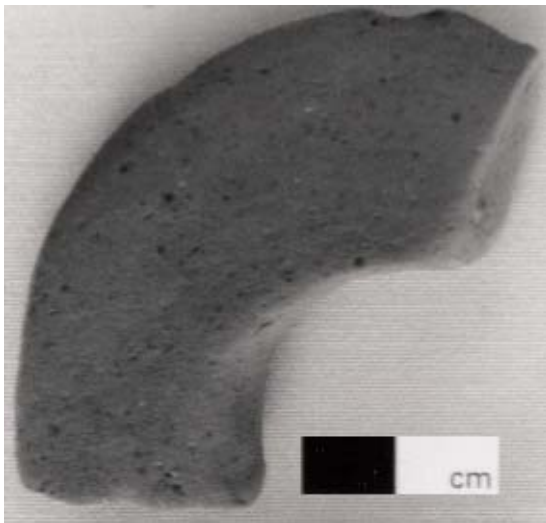


Figure 5.39 Orange-red Group 1 horizontal handle. Photograph courtesy Nikopolis Project.

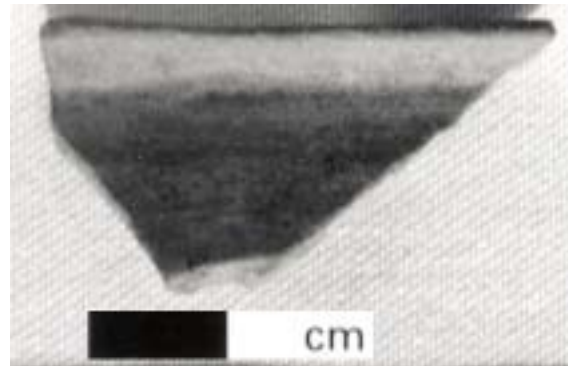


Figure 5.40 Orange-red Group 2 rim from small cup or amphoriskos. Photograph courtesy Nikopolis Project.



Figure 5.41 Orange-red Group 2 rim from deep cup or bowl. Photograph courtesy Nikopolis Project.



Figure 5.42 Orange-red Group 2 body sherd with ovoid impressions. Photograph courtesy Nikopolis Project.

and belongs to a larger spherical cup or bowl that was covered with a red slip (Figure 5.41). A most unusual piece is a carinated body sherd that is the sole example of decoration on an orange-red fabric: small, ovoid impressed shapes, formed by pressing the end of a reed or some hollow, cylindrical object into the soft or leather-hard clay, cover much of the exterior surface (Figure 5.42). In addition, scraping of the exterior left behind shallow grooves of varying orientations. Finally, a wide domed base comes from a thick-stemmed vessel that may be an imitation of a Mycenaean deep bowl or stemmed bowl.

The sherds of Group 2 find close comparanda in many sherds from Krya that are related to the earlier form of Northwestern matt-painted ware. This may be taken as an indication that they represent a local tradition dating roughly from the late 11th to early 9th century; i.e., as part of the first wave of influence from the vicinity of southern Albania at the end of the Bronze Age. The matt-painted ware of Boubousti type may have descended from orange wares of Late Bronze Age date from Thessaly and Macedonia (Dietz 1991: 214–215; Vokotopoulou 1986: 364–366).

Other orange-red fabrics

A body sherd and a few handles in a sandy-textured fabric belong to medium or heavy vessels. The fabric is far coarser than the other orange-red wares, with abundant rock, clay, calcite, and mica inclusions, but is nonetheless well fired. The surfaces are orange or red (5YR 6/8 reddish yellow), with thick blue-gray to gray cores. The body sherd has a dark red margin layer between the surface and the core. Only one sherd provides a clue to the original vessel shape: a horizontal, trianguloid handle comes from a large open pot. I know of no close parallels for this fabric; it may be related to a coarse, sandy orange-red fabric known in a few handmade kylikes from Dodona and Kastritsa, but I believe that the inferior forming and firing of the kylikes sets them apart.

Taken together, orange-red sherds comprise less than two percent of those discovered in survey, and were positively identified at only eight findspots (Table 5.2). It is difficult to know how well orange-red wares *ought* to be represented in the survey area, since no excavated assemblage from southern Epirus has been studied. In my informal survey of the pottery excavated at Ephyra, I estimated undecorated Orange-red ware at just over five percent of the prehistoric sherds, but this is at best a general guideline. Orange-red and matt-painted sherds together form 16% of the total in the Bouleuterion deposit at Dodona. A more modest representation might be anticipated in the southernmost districts of Epirus if the source of the innovation lies to the north, just as one might expect elements of Mycenaean material culture to be more strongly represented in the southern and coastal zones. Much more information is needed concerning the distribution of orange-red pottery, and the patterns of dissemination of goods and ideas of foreign origin.

Mycenaean

Approximately 54 sherds, mostly undecorated, of Mycenaean type were discovered (Table 5.2). Identifications were made on the bases of fabric, shape, and decoration. Special problems of identification arose from two main sources: the deterioration suffered by exposure on the surface, and the close similarity in fabric, firing, and even vessel forms to historical, particularly Hellenistic, pottery. Distinctive features such as painted decoration and details of shape were often erased, sometimes making the task of distinguishing Mycenaean from later fine wares in fragmentary form difficult. I chose to be conservative in assigning ambiguous sherds to the Mycenaean fabrics; this decision may cause some slight underestimation of the total figure in the surface collection, but not one that in my opinion is likely to be of real significance.

Whereas Mycenaean sherds were collected from eight findspots, almost half came from a single site—Skaphidaki on the Ayios Thomas peninsula (Figures 4.15, 4.16). Without that site, the sherds of Mycenaean type make up less than 1.5% of the total assemblage, and this combined with the relatively few find locations argues against the notion that Mycenaean vessels were ever plentiful or in wide circulation in Epirus. The abundance of Mycenaean pottery is not likely to be greater in the interior zones more removed from presumed coastal points of entry.

The Mycenaean pottery comes in two main fabric colors that are at times quite distinct, and at times merge in individual sherds. There is a pinkish buff version with a slightly rosy cast whose Munsell colors are pink (7.5YR 7/4 and 7.5YR 8/4) to reddish yellow (7.5YR 7/6 and 7.5YR 8/6). The other fabric is a pale buff, with Munsell colors of pale brown to very pale brown (10YR 8/3 and 10YR 8/4 to 10YR 8/7). It is not unusual for the surface to fire to a pale buff color, while the margins and core are pinkish. These fabric colors are mirrored in the excavated Mycenaean ware at Dodona and Ephyra. A sandy, slightly redder (5YR 7/8 reddish yellow) fabric not noted in survey is encountered in three kylix sherds from the Kiperi tholos tomb that have exact parallels in the provincial Mycenaean fabric of the Serementi tholos tomb near Ayios Ilias in Aitolia (Wardle 1977: 166; Papadopoulos 1981b).

The fabrics of both colors are normally fine and evenly fired. Inclusions are usually tiny or not visible to the naked eye, although heavier vessel shapes may be somewhat coarser. Many of the sherds preserve ridging and other signs of manufacture on the wheel, but handmade imitations are attested in Epirus as well, e.g., the alabastron-like vase from Mazaraki (Wardle 1972: fig. 125: 507). The pale buff fabric in particular looks very provincial, and includes some heavier sherds from undecorated handmade pots. These sherds recall a locally produced ware of Thermon that is being recovered in substantial amounts in the ongoing excavations of Megaron B. It is thought by the excavators to be a local imitation of Mycenaean ware dating to the

CERAMICS

end of the Mycenaean sequence (V. Noulia and I. Papapostolou, personal communication 1995).

Sufficient feature sherds were collected to provide some idea of the range of shapes in circulation in southwestern Epirus, and to permit limited comparison with the Mycenaean pottery already known in the region. For comparative purposes, it will be useful to have rather detailed descriptions of sherds that are diagnostic by shape, decoration, or fabric. The following is a partial catalogue of decorated sherds and undecorated feature sherds of Mycenaean type.

Decorated Mycenaean sherds

Painted decoration was detected on six body sherds and one rim sherd. Only two sites, Ephyra near the Acheron River mouth, and Skaphidaki on the Ayios Thomas peninsula, produced painted Mycenaean pottery.

EPHYRA VICINITY: TWO BODY SHERDS WITH FAINT PAINTED BAND DECORATION

Shape: curved body sherds; wheelmade; original shapes uncertain

Fabric: fine; powdery clay that rubs off on the hands; color 7.5YR 7/6 reddish yellow

Thickness: 4.5 mm and 5.1 mm

Decoration: horizontal band of medium width is faintly visible; color 2.5YR 5/8 red

Chronology: uncertain; the fineness and decorative scheme suggest a date not later than LH IIIB, but not assured. Broad, painted bands are common decoration in LH IIIB Mycenaean pottery in the Ionian Islands.

SKAPHIDAKI: MONOCHROME PAINTED BODY SHERD (Figure 5.43f)

Shape: carinated body sherd; wheelmade; from FS 267 kylix or FS 240 carinated cup?

Fabric: fine; uniform fabric color 7.5YR 7/6 reddish yellow

Thickness: 4.5 mm

Decoration: interior and exterior painted red (2.5YR 4/6), evenly applied; thin incised line at carination

Chronology: LH IIIA2/B (kylix); LH IIIC (cup)

SKAPHIDAKI: MONOCHROME PAINTED BODY SHERD (Figure 5.43g)

Shape: small body sherd; original shape uncertain

Fabric: fine; probably wheelmade; color 7.5YR 7/6 reddish yellow

Thickness: 4.9 mm

Decoration: interior and exterior covered by unevenly applied paint that shades from 2.5YR 4/6 red to 2.5YR 2.5/2 very dusky red in lighter and darker horizontal zones

Chronology: LH IIIC–Protogeometric

SKAPHIDAKI: BODY SHERD WITH EXTERIOR PAINTED BAND DECORATION AND MONOCHROME PAINTED INTERIOR (Figure 5.43d)

Shape: body sherd; FS 294 linear basin, FS 281 krater?

Fabric: medium fine; wheelmade; surface color pink (7.5YR 8/4) with slightly darker core (7.5YR 7/8 reddish yellow)

Thickness: 6.0 mm

Decoration: unslipped exterior with wide, unevenly applied painted horizontal band, of 2.5YR 5/8 red; interior painted monochrome 2.5YR 3/6 dark red shading to 2.5YR 2.5/2 very dusky red

Chronology: LH IIIB–Submycenaean?

SKAPHIDAKI: BODY SHERD WITH PAINTED BAND DECORATION (Figures 5.43c; 5.44)

Shape: slightly curved body sherd; wheelmade; from belly of stirrup jar or other globular shape

Fabric: fine; wheelmade; surface color 7.5YR 7/6 reddish yellow

Thickness: 5.5 mm

Decoration: unslipped exterior surface with three painted horizontal bands of medium width, paint unevenly applied with 5YR 4/3 reddish brown in concentrated center of band and 5YR 6/6 reddish yellow to 5YR 5/6 yellowish red in more diffuse paint at band edges; interior undecorated

Chronology: LH IIIA2–LH IIIC Early; LH IIIB likely

SKAPHIDAKI: RIM SHERD WITH TRACES OF PAINT ON EXTERIOR AND INTERIOR (?) (Figures 5.43e; 5.45)

Shape: rim fragment, possibly from FS 254, 255 goblet or FS 305 stemmed bowl

Fabric: fine; wheelmade; evenly fired to uniform color, between 10YR 8/3 very pale brown and 7.5YR 8/4 pink

Thickness: 3.5 mm

Decoration: traces of dark reddish brown paint (5YR 3/2) adhere to top of rim, rim exterior, and body exterior; no certain evidence of interior decoration and no way to determine if painted decoration was patterned or monochrome

Chronology: LH IIIA on the basis of similarity to an LH IIB–LH IIIA1 shape in southern Greece; a sherd from Dodona with this shape and a foliate band decoration was dated to LH IIIA2 or “a little earlier” (Wardle 1972: 197, fig. 124: 477); LH IIIB more likely if FS 305

Undecorated feature sherds of Mycenaean type

From several sites come rims, bases, and other vessel elements that are recognizable as Mycenaean shapes, although they are undecorated or preserve no trace of the decoration they once possessed.

SKAPHIDAKI: KYLIX BASE WITH BASE OF STEM (Figures 5.43a, 5.46a)

Shape: three mended sherds from a wheelmade kylix, with broad, flat base intermediate between concave and domed; round, slender stem; cf. FS 258, 266, 275

Fabric: fine, powdery clay that rubs off on the hands; color between 7.5YR 7/4 pink and 7.5YR 7/6 reddish yellow

Dimensions: base diameter 6.40 cm; stem diameter 1.72 cm

Decoration: undecorated

Chronology: LH IIIB is likely; the combination of broad, flat base and slender stem is most prominent in LH IIIB (1 and 2)—when it is found on both decorated and

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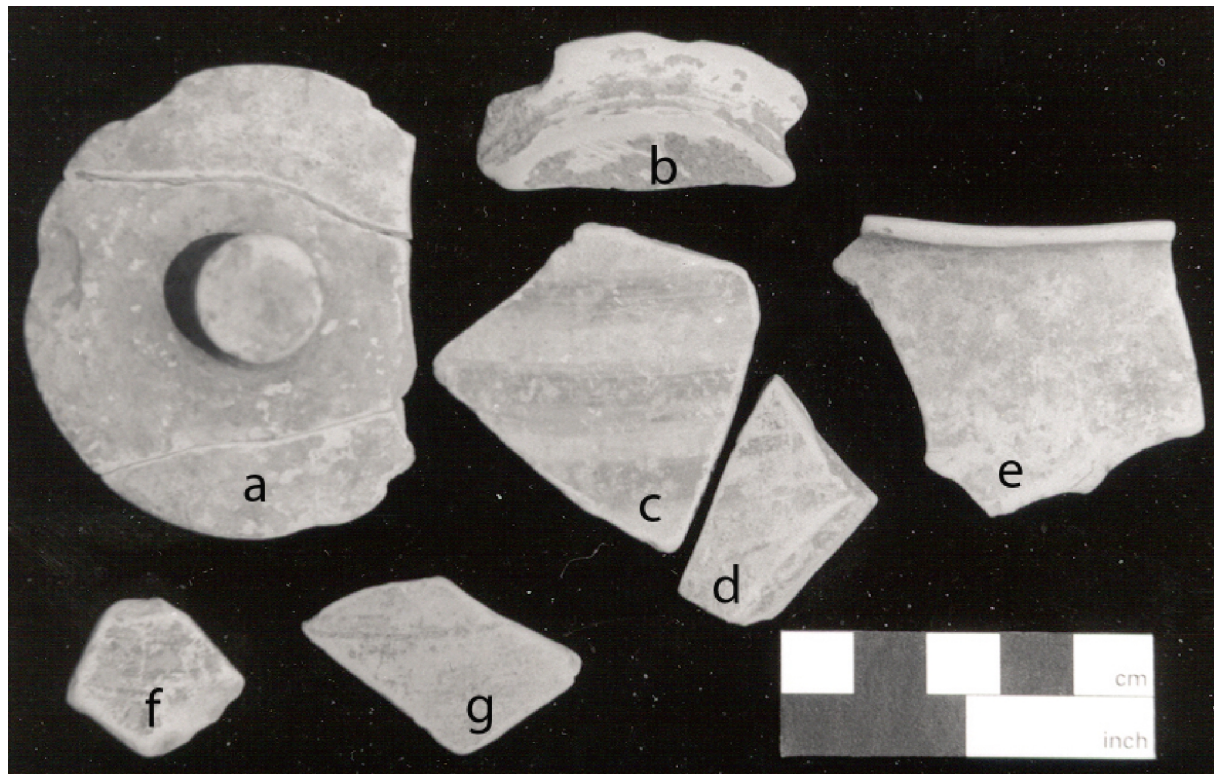


Figure 5.43 Sherds from vessels of Mycenaean type, from the Nikopolis Project surface survey .



Figure 5.44 Detail of Mycenaean sherd, Figure 5.43c.

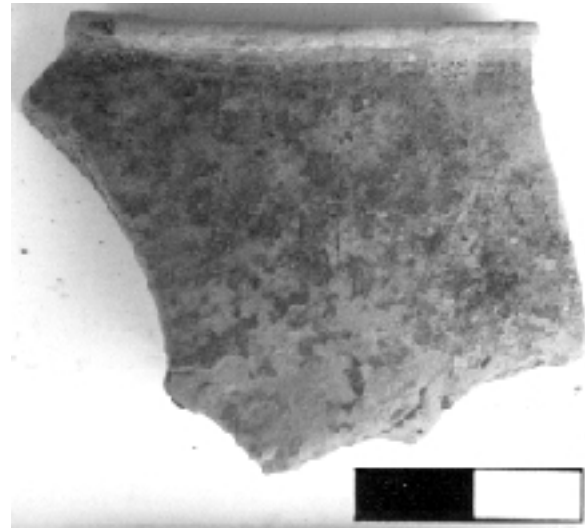


Figure 5.45 Detail of Mycenaean sherd, Figure 5.43e.

undecorated vessels—and does not occur before LH IIIA2 Late or after LH IIIC1. I do not know of precise parallels in Epirus.

EPHYRA VICINITY: FRAGMENT OF KYLIX STEM (Figure 5.46c)

Shape: kylix stem sherd with slight spreading indicating location adjacent to bowl

Fabric: fine; well fired; uniform color 7.5YR 8/4 pink, or just a bit browner

Dimensions: length 2.80 cm; stem diameter 2.25 cm maximum

Decoration: no decoration preserved

Chronology: LH IIIA or later on general formal grounds; doubtful before LH IIIA2, but uncertain beyond that

VOUVOPOTAMOS: KYLIX OR KRATER BASE (Figure 5.47)

Shape: domed base sherd, partially broken away in upper portion; flattened bottom; may belong to krater or elaborated kylix base

Fabric: fine; well fired; somewhat powdery; color uniform, very pale brown (10YR 8/4)

Dimensions: base diameter 11.0 cm; thickness at flattened base 8.0 mm

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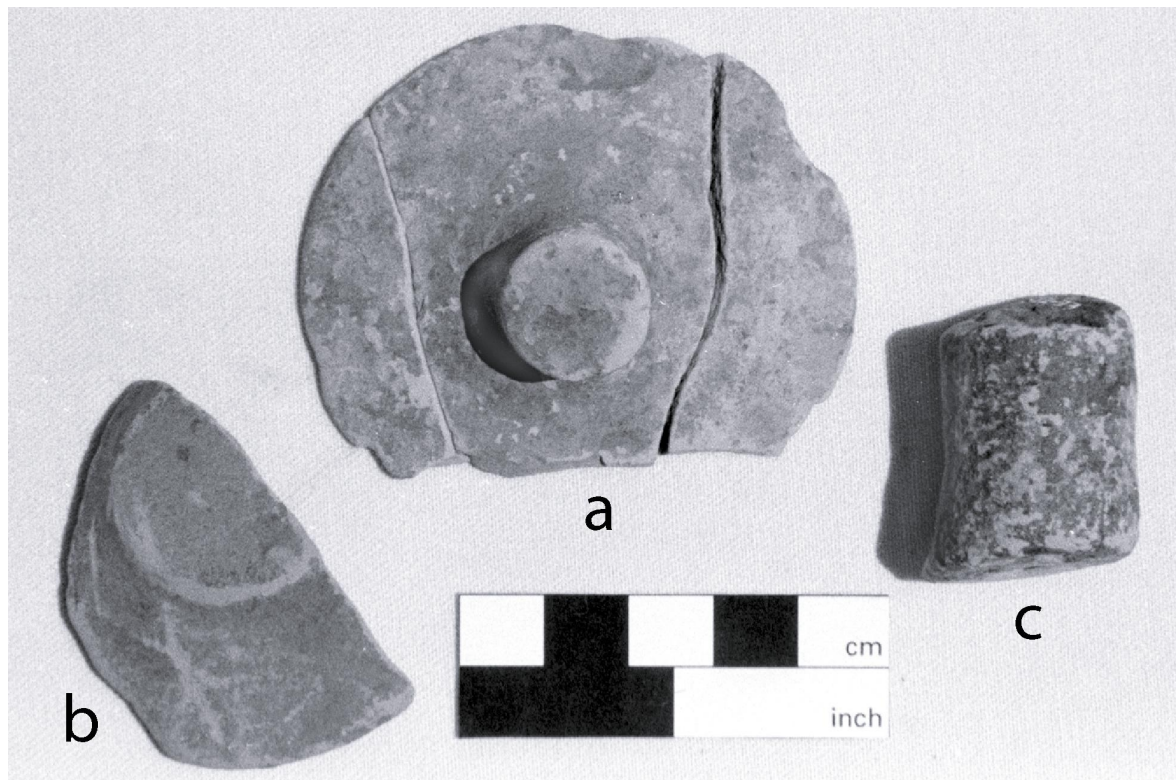


Figure 5.46 Sherds from Mycenaean kylikes, from the Nikopolis Project surface survey .



Figure 5.47 Krater (?) base of Mycenaean type.

Decoration: no preserved decoration; very likely fugitive

Chronology: uncertain; plausibly LH IIIC or later on the basis of very pale buff fabric that has similarities to a late buff fabric at Thermon; possible parallel is an elaborate kylix base from Kastritsa (Dakaris 1952: fig. 3: 4), but the diameter of the base strongly suggests a krater rather than a kylix shape.

SKAPHIDAKI: BASE OF CLOSED (?) VESSEL (Figure 5.43b)

Shape: slightly concave raised base (ring base), probably wheelmade, from closed vessel such as stirrup

jar or jug, e.g., FS 171, FS 167; an open shape, especially a deep bowl FS 284 is also possible

Fabric: fine, well fired; surface color 10YR 8/3 very pale brown; core color 7.5YR 7/4 pink

Dimensions: base diameter 6 cm; wall thickness 31 mm at point closest to base

Decoration: no decoration preserved

Chronology: uncertain; probably LH IIIB1 or slightly later

SKAPHIDAKI: SEVERAL RIM SHERDS FROM A LARGE, OPEN VESSEL

Shape: minimum of three joining everted rim sherds

from a large open vessel; perhaps a basin or deep conical bowl

Fabric: medium fine, well fired; somewhat powdery; uniform fabric color between 7.5YR 8/6 and 7.5YR 7/6 reddish yellow

Dimensions: rim diameter 24 cm; wall thickness 50–55 mm

Decoration: no decoration preserved

Chronology: uncertain

Other Mycenaean potsherds

The balance of the Mycenaean pottery consists of a few vertical strap handles that belong to large jugs or amphoras, and several dozen undecorated body sherds. These have been identified primarily on the grounds of fabric color, fineness, and association with prehistoric assemblages. Although such identifications can be equivocal, I am certain that Mycenaean pottery is present at all of the findspots to which it is attributed.

Conclusions

Mycenaean pottery is found at a limited number of locations and in a limited number of shapes and styles in the survey area. It is at first glance surprising that so little was recovered in a coastal zone known to have witnessed a substantial Mycenaean presence, and presumed to have played a significant if perhaps not critical role in commercial activity linking the Aegean with the Balkan area and the central Mediterranean. A central aim in evaluating the surface survey data will be to determine whether Mycenaean material is underrepresented, or instead that the scarcity of Mycenaean pottery on surface sites reflects a truly sparse supply of Mycenaean pottery in the region. Distortions may arise as a consequence of biases introduced by research designs or methods, or by natural processes of the landscape that determine the accessibility of artifacts on the surface at specific times and places. Much of the known Mycenaean material comes from burials, implying that such objects were prized personal possessions. The inability to routinely discover burial remains on the surface may have prevented us from exploiting an entire class of contexts likely to produce Mycenaean material, thus introducing a bias favoring underrepresentation. On the other hand, the perception that Mycenaean objects were prized possessions to be hoarded and taken to the grave is itself founded on discovery conditions that have ignored the potential of systematic search of the countryside for the smaller settlements and activity areas at which Mycenaean products may have circulated. Thus, the scarcity of Mycenaean pottery produced by systematic survey of a zone presumed to have witnessed significant Mycenaean contact lends weight to the conclusion that such pottery was never in wide circulation (Touchais 2002: 207).

The shapes, decorations, and technical features, as far as they can be determined, of the Mycenaean pottery do not

occasion much surprise. The fabrics, colors, and vessel types conform to those known to have existed elsewhere in Epirus, except that their scope is of course much more limited. The proposed chronology for the sherds falls in line with the dating of Mycenaean pottery at other Epirote sites: a range from late LH IIIA1 or LH IIIA2 to Submycenaean times is indicated. By comparison, the Mycenaean pottery of Ephyra, which lies within the Nikopolis Project survey area, has a reported chronological range of LH IIIA to LH IIIC, with an apparent emphasis in LH IIIA2–B (e.g., Papadopoulos 1986a, 1987a). The sherds from the Kiperi tholos tomb, also within the survey area, date from LH IIIA1 to LH IIIA2–B (Papadopoulos 1981b). At Dodona, Mycenaean ware dates to LH IIIA2–LH IIIC (Wardle 1972: 197–199). Several cist tombs have produced late Mycenaean vessels of LH IIIC and Submycenaean type (Vokotopoulou 1969b).

The sherds have a provincial appearance in fabric and decoration; most or all were probably imported from provincial Mycenaean centers outside Epirus. A small industry imitating Mycenaean pots has been hypothesized for Ephyra in LH IIIB and LH IIIC (Soueref 1986: 116–169), and some clumsy imitations of kylikes from Kastritsa and Dodona are clearly of local manufacture (Figure 5.9), but to date no tangible evidence of any firing installation of LBA date has been revealed, nor any indication of a local ware of similar color, fineness, or decoration. I do not believe that any of the pinkish buff or pale buff Mycenaean pottery in the survey collection was made locally, although a few of the orange-red sherds (mentioned above) do appear in Mycenaean shapes, and probably indicate local imitations in LH IIIC and later.

Endnotes

1. Using strict definitions of maximum diameter, some pithoid jars are closed vessels.
2. Samples of clays were collected systematically in southwestern Epirus by M. Moore, and the results of her analyses are described in her doctoral dissertation (Moore 2000). Moore's project focused partly on procurement and processing of local ceramic resources, but with a primary interest in historical times.
3. The terms *Eneolithic*, *Chalcolithic*, *Late Neolithic II*, and *Final Neolithic* refer to roughly the same transitional time period between the Neolithic and the Bronze Age, but have arisen on account of isolated scholarly traditions in different areas of the Old World.
4. It is significant that an earlier connection may be manifested in the similarity of the earliest tumuli of the R-necropolis near Steno on Lefkas, dated to EH II, with the

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earliest tumuli in Albania, which have been assigned similar dates, and with others discovered recently in Dalmatia (Forsén 1992: 235–237). The main problem with these parallels is that the dating of the northern tumuli remains uncertain, precluding synchronisms for the time being.

5. Eleven Bronze Age sherds of local manufacture were among a selection from the Nikopolis Project contextual collection brought to Boston for petrographic analysis by M. Moore (see note 2 above). We thank Drs. A. Douzougli and K. Zachos for their assistance in acquiring the necessary permits.

6. The discrepancy between the total number of sherds collected (2,087) and analyzed (1,862) exists because only 29 of 41 sites at which Bronze Age sherds were recovered were analyzed. The other 12 findspots are either minor occurrences (three sherds or fewer) or locations at which small quantities of Bronze Age sherds were buried in huge collections of historical material that have not yet been sorted (e.g., Kastri, Michalitsi). Further, some sherds were too fragmentary to bear measurement.

Chapter 6: Artifact Analysis: Lithics and Other Classes of Material Culture

The Bronze Age Lithic Industry of Southwestern Epirus¹

It can be said almost without exaggeration that flint flakes and stone tools blanket the surface of southwestern Epirus. Survey teams counted and collected thousands of pieces, ranging from huge, heavy tools to flake debris. To date, however, only the Paleolithic stone industries of Epirus have been studied systematically (Higgs and Vita-Finzi 1966; Higgs et al. 1967; Adam 1989; Bailey 1997; Papagianni 2000; Runnels and van Andel 2003; Runnels, Karimali, and Cullen 2003). The recognition of a Bronze Age industry is impeded by problems of chronology and typology. There are virtually no undisturbed Bronze Age strata in Epirus with continuous and clear internal phasing by which lithic material could be closely dated, for example in association with organic material for which absolute dates could be determined (Chapter 3), and the Bronze Age pottery exhibits insufficient formal variability to be of much use in close dating of these deposits by purely stylistic characteristics (Chapter 5). Further, the later prehistoric (Neolithic–Bronze Age) tool types that are well studied elsewhere in Greece and surrounding areas are mostly lacking in Epirus, meaning that we began for all practical purposes with unknown and undefined Bronze Age traditions.

These challenges were further complicated by the obvious contextual uncertainties of surface materials (for example, Torrence 1991: 173–183). In the absence of stratified deposits, it was necessary to devise a method to distinguish Bronze Age lithics from those of other periods. Our method relied on the identification of findspots where we could demonstrate the association of certain lithic types with broadly datable Bronze Age material, usually pottery. The strength of the association was evaluated in each case with reference to data collected during survey, including microlocational patterns and geomorphological processes. The lithics were also examined for intersite patterns in morphology, technology, and postdepositional conditions. A few stone tools could be recognized as formal tool types diagnostic of the Bronze Age elsewhere in Greece; these were matched against the findspots and artifacts identified in the previous steps, as was an additional group of lithic artifacts recovered from radiocarbon-dated strata in stratified scarp profiles.

Enhanced by the Nikopolis Project's large collection of surface lithics, this simple procedure produced interesting results (Tartaron, Runnels, and Karimali 1999). A small number of contexts featured substantial amounts of Bronze Age pottery with closely associated flaked stone tools and debris (Table 6.1). These assemblages share certain similarities, chiefly the predominance of flakes, the varieties of flint, the techniques of tool manufacture, and other characteristics. Some retouched tools are diagnostic in typological terms, and others are stratified pieces datable

by their contextual associations. On the basis of our analysis, a preliminary attempt to define and describe the Bronze Age lithic industry of southern Epirus is possible.

Definition

The Nikopolis assemblage, defined by these means, is dominated by unretouched flint flakes and toolmaking debris, with a limited number of retouched, formal tools useful for comparison with material from elsewhere. The Bronze Age lithic industry was a simple one based on flakes removed from small pebble cores of flint. Flakes were produced in an opportunistic way by removal from multidirectional cores, which were then discarded, and sometimes picked up at a later time for further processing. A few prismatic blades were collected, but they are an insignificant part of the local industry. Whereas flakes were sometimes retouched into a limited range of tool types, it was common to use simple flakes for expedient cutting and scraping tasks. Torrence (1991: 193) notes this phenomenon in surface assemblages from Keos and suggests that undiagnostic, unretouched artifacts represent a major class of tools. Use-wear was detected on unretouched obsidian and flint flakes at Lerna (Runnels 1985: 377, table 4), and the practice may have been even more prevalent at other sites. This exploitation of flint is an indication of the ready availability of local raw materials, reflecting a pattern of raw material utilization that is often termed an “expedient technology” (Binford 1977: 35; Camilli 1989: 22–26).

The association of small cores with cortical and noncortical flakes and debitage from all stages of production indicates that flintknapping occurred on all sites. The Epirote industry may be characterized as decentralized and unspecialized, driven by simple technology and by subsistence concerns. This is a marked departure from the pattern of specialized production centers with radiating consumption sites found around the Aegean, characterized by specialized production at a few sites controlling the acquisition and manufacture of certain materials or tool types, with a large number of associated sites at which finished products are predominantly or exclusively found. Lerna and Site F32, both in the Argolid, are examples of centers that specialized in the manufacture of blades and other tools from obsidian, which was obtained directly or through exchange networks from the island of Melos (Runnels 1985; Kardulias 1992; Kardulias and Runnels 1995).

Raw materials

Flint² was the principal raw material used for flintknapping. A light bluish gray flint was available in local streams, primarily in the form of nodules, and was widely used (Figure 6.1). Reddish brown, brown, and purplish brown flints, representing the range of variation in locally

LITHICS AND OTHER MATERIALS

Table 6.1 Association of Bronze Age pottery and lithic assemblages.

<i>Site name</i>	<i>ID</i>	<i>BA pottery sherds</i>	<i>Lithics (total pieces)</i>	<i>Certainty of association*</i>
Kastriza	N-3	116	45	high
Koulia	N-6	11	478	high
Koulia Grove	N-7	30	9	high
Koumasaki	N-8	213	1,284	high
Pountas	N-9	24	254	exclusive
Vouvopotamos	N-13	409	43	high
Xirolophos #1	N-14	39	14	exclusive
Xirolophos #2	N-15	131	52	high
Latomeion	N-16	24	2	exclusive
Skaphidaki	N-17	66	1	exclusive
Galatas	N-19	21	dozens	high
Ephrya	E-3	486	299	high
Kiperi	E-20	38	32	high

*Certainty of association is a qualitative, and thus somewhat subjective, characterization. The degrees of certainty are defined as follows: *exclusive* means intimate spatial association with pottery on sites at which only Bronze Age pottery is present; *high* means intimate spatial association with Bronze Age pottery on sites at which pottery of periods other than the Bronze Age is also present.



Figure 6.1 Examples of locally available flint nodules. Photograph courtesy Nikopolis Project.

available flint nodules, were also exploited. A rarely occurring dark brown flint may be imported; a few projectile points typologically similar to MBA–LBA forms known elsewhere in Greece are made from it (Runnels 1985: 378). The predominance of flint is a consequence of its general availability, and the isolation of Epirus from networks through which raw materials, particularly obsidian, were exchanged. Along the Aegean side of Greece, regular access to obsidian has been demonstrated for many sites in the Bronze Age (Torrence 1986). In these areas, obsidian was the principal raw material, often accounting for as much as 90% of all Bronze Age flaked

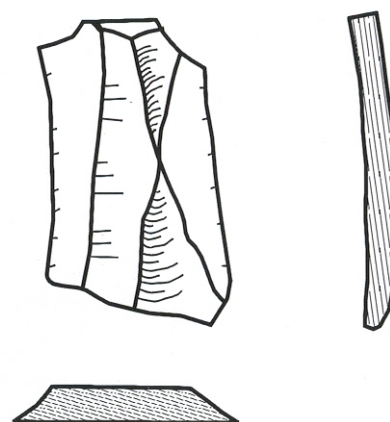


Figure 6.2 Obsidian blade segment (TST-6).

stone (Runnels 1985: table 1; Kardulias 1992: table 1; Kardulias and Runnels 1995: table 5-13). In the Nikopolis Project survey area, a single obsidian artifact, a blade fragment whose macroscopic attributes suggest a Melian source (TST-6; Figure 6.2), was identified among thousands of otherwise flint pieces collected by survey teams. This result is especially striking in light of evidence that obsidian (thought to be Melian) was circulating in the Ionian Islands, including nearby Lefkas, in moderate but perceptible amounts in Neolithic and Bronze Age times (Souyoudzoglou-Haywood 1999: 46–47).

If Epirus lay outside obsidian exchange networks, a model for a transitional zone with sporadic access to Melian obsidian can be detected in Messenia, where lithic assemblages from Bronze Age levels at Malthi and Nichoria have been analyzed (Blitzer 1991, 1992), and substantial surface collections were made at numerous sites by the Pylos Regional Archaeological Project (PRAP: Parkinson 1999). In terms of material, the flaked stone assemblage of Nichoria is the inverse of the sites nearer the Aegean Sea: 91.4% of all pieces are flint, 8.6% are obsidian (Blitzer 1992: table 12-1). At Malthi, the ratio is not as dramatic: 63.3% flint, 36.7% obsidian (Blitzer 1991: 2). Although flint was clearly abundant in the vicinity of these two sites, and accounted for most of the raw material exploited, some obsidian was obtained in the form of pebbles and cobbles, which were worked on site (Blitzer 1991: 3–5, 1992: 713–715). Parkinson (1999: 78–79) doubts that obsidian blade production was ever significant at either site, however, preferring to interpret these assemblages as the consumption of finished blades manufactured elsewhere. The same may be said of the PRAP surface lithic sites, with the exception of one site, Romanou, where strong evidence of core preparation and blade production from roughed-out cores of Melian obsidian was found (Parkinson 1999: 76–80). Romanou (and perhaps other sites like it) may have been a regional production and distribution center for finished blades. Around the Peloponnese, knappers apparently preferred obsidian even when high-quality flint was available (Kardulias 1992: 434, 1999: 66–67), and toolmakers and tool users in Messenia no doubt valued the opportunity to work with obsidian when they could get it. The absence of obsidian in Epirus provides further evidence, noted already in the lack of signs of external contact in the ceramic repertoire (Chapter 5), for isolation from interregional interactions before the LBA.

Retouched tools

A small number of flakes were modified by retouch to create working edges and, in some cases, formal tools. The usual procedure involved marginal retouch to create sharp edges, or to denticulate one or more edges, creating an elementary, multipurpose tool. Careful retouch often formed one or more distinct notches. Tool types include perçoirs (drills), sickle elements, projectile points, notched pieces, denticulates, and end scrapers, which can be compared with known Bronze Age types elsewhere in Greece. Although the number of Nikopolis Project types falls far short of the 42 Bronze Age types defined in the southern Argolid (Kardulias and Runnels 1995: table 5.3), and the 23 Bronze Age types at Agios Stephanos (Kardulias 1992: 427), other tool types will be discerned as study proceeds. One of the most characteristic types is the sickle element ($n = 8$). The Nikopolis sickle elements are truncated, backed, denticulated flakes with silica gloss (Figure 6.3a, b). Only one sickle element was made on a blade and may be a LN–EBA II type (Figure 6.3c; cf. sickle elements of Neolithic type from Thessaly: Karimali 1994:

284, tables D1–D13). There is one sickle element typical of the MBA–LBA (Figure 6.3d; cf. Runnels 1985: 383–384 [Lerna]; Karimali 1994: tables D11–D13 [Pefkakia]), and one manufactured on a double endscraper (Figure 6.3e). Silica gloss is also found on unretouched flakes, a phenomenon noted also in LBA excavated contexts at Dodona (Wardle 1972: 188) and Ephyra (my observation). Local communities were clearly harvesting plants in the Bronze Age for food and other purposes, but we cannot at present distinguish wild resource exploitation from agriculture.

One hollow-based-type projectile point can be attributed confidently to the MBA–LBA (Figure 6.4a). The concave, relatively shallow notch of this specimen is a diagnostic attribute for which there are comparanda in several MH and LH contexts in southern Greece (e.g., Runnels 1985: 388 [Lerna]; Blitzer 1992: 718–719 [Nichoria]). In the neighborhood of Epirus, 29 such projectile points were recovered from the Middle Bronze Age S-grave S4 at Skaros on Lekfas (Dörpfeld 1927: 313), and one at Aphiona on Kerkyra (Sordinas 1969). Nikopolis Project teams collected six additional fragmentary projectile points, but they may date in part to the late Neolithic (Figure 6.4b–g).

Because other tool types—notches, perçoirs, end scrapers, and retouched flakes—are known from the Neolithic as well as the Bronze Age (Kardulias and Runnels 1995: table 5.14), the specimens of those types, if attributed to the Bronze Age, are assigned solely on the strength of close association with Bronze Age pottery.

Recent excavations at Sovjan in southeastern Albania have yielded a small assemblage of lithics, and some general, preliminary comparisons with the Epirote corpus may be made. To date, around 120 lithic pieces have been recovered from Middle Bronze Age–Early Iron Age levels, and of these, 63 have been subjected to initial analysis (Kourtessi-Philippakis 2002). At Sovjan, flint is the dominant raw material, with lesser specimens of chalcedony, jasper, and quartz, but no obsidian. Because the mountains surrounding the site possess high-quality sources of flint and jasper, the working hypothesis is that the raw material is mainly local. Approximately half of the pieces could be recognized as tools. Among these were 12 *pièces esquillées* for splitting hard material such as bone or wood, and several retouched bifacial denticulates with silica gloss, useful for cutting soft vegetation. The tools generally exhibit intensive use wear, and multiple use wear zones were detected on single tools, suggesting their use for a variety of tasks on diverse materials, including soft plants, bone, meat, and wood.

The differences between the Sovjan lithics and those we recovered from surface sites in southern Epirus are perhaps more significant than their similarities, at least to our present state of understanding. The absence of obsidian at Sovjan implies that southeastern Albania also lay outside networks of exchange that brought Melian obsidian to some sites in northeastern Greece, such as Dikili Tash (Seferiades



Figure 6.3a Sickle element on a flint flake with silica gloss. Photograph courtesy Nikopolis Project.



Figure 6.3b Sickle element on a flake with silica gloss. Photograph courtesy Nikopolis Project.

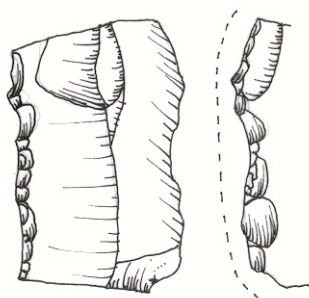


Figure 6.3c Sickle element on a blade with silica gloss, possibly of LN-EBA II type. Drawing by C. Runnels and P. Murray; Photograph courtesy Nikopolis Project.

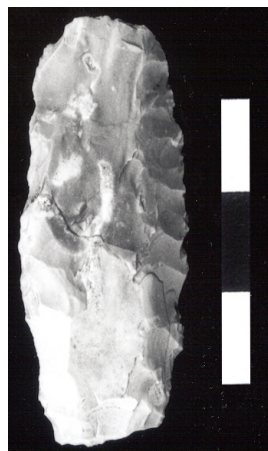
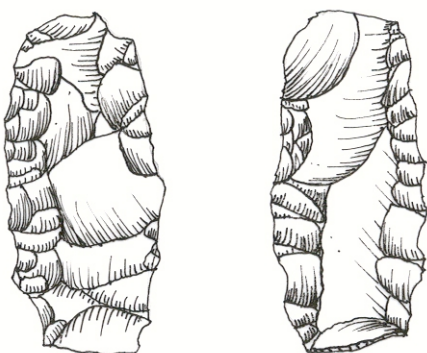


Figure 6.3d Sickle element typical of MBA-LBA type. Drawing by C. Runnels and P. Murray; Photograph courtesy Nikopolis Project.

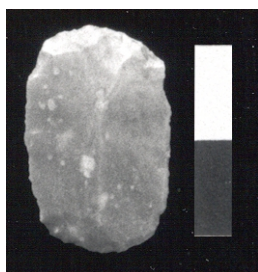


Figure 6.3e Sickle element on a double endscraper. Photograph courtesy Nikopolis Project.

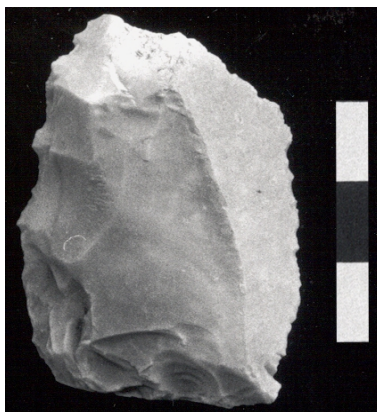


Figure 6.3f Sickle element on a flake. Photograph courtesy Nikopolis Project.



Figure 6.3g Sickle element on a flake with traces of silica gloss. Photograph courtesy Nikopolis Project.



Figure 6.4a Hollow-based projectile point of MBA-LBA type. Photograph courtesy Nikopolis Project.

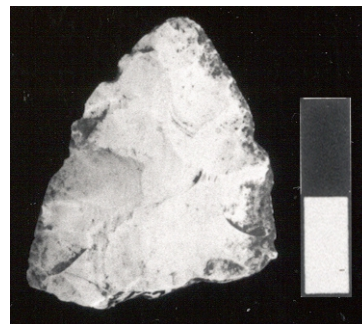


Figure 6.4b Fragment of projectile point of LN-BA type. Photograph courtesy Nikopolis Project.

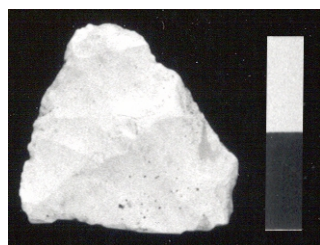


Figure 6.4c Fragment of projectile point of LN-BA type. Photograph courtesy Nikopolis Project.

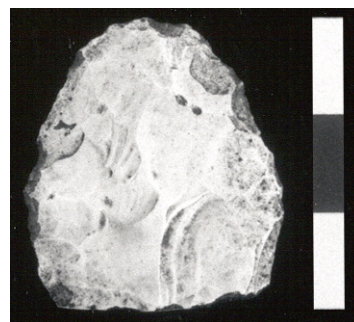


Figure 6.4d Fragment of projectile point of LN-BA type. Photograph courtesy Nikopolis Project.

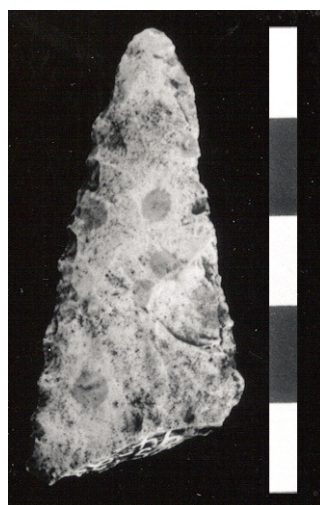
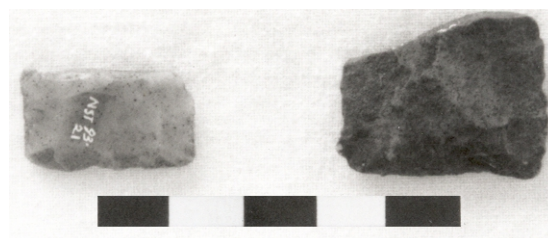


Figure 6.4e Fragment of projectile point of LN-BA type. Photograph courtesy Nikopolis Project.



Figures 6.4f (left), 6.4g (right) Fragmentary bases of Neolithic-BA projectile points. Photograph courtesy Nikopolis Project.

1992) and Mandalo (Kilikoglou et al. 1996). Yet the striking abundance of flaked stone at several sites in the Nikopolis Project survey area contrasts with its general rarity at sites in northern Greece and southern Albania: on the eastern side of the Pindos mountains, Kastanas produced around 100 pieces, Pentapolis around 250, and Dikili Tash 26 (Kourtessi-Phillipakis 2002: 82). At Sovjan, there is little evidence, in the form of cores or flaking debitage, that stone was flaked on site. If previously reduced material was being brought in from elsewhere, this may explain the high percentage of tools, as well as the evidence for intensive use wear resulting from a need to reuse and recycle existing material. Such conservation of material is unlike the opportunistic strategy apparently practiced in southern Epirus, where we have clear evidence that massive amounts of flint were processed on many sites, and unretouched flakes (rather than tools in a strict typological sense) served as multi-purpose tools, which were simply discarded when exhausted.

Conditions of discovery

The Epirote lithics are generally fresh and unpatinated, with minimal signs of long exposure on the surface. Recent modernization and agricultural works have accelerated the exposure of long-buried archaeological materials, and many of the lithics have been brought to the surface in the last decades. Nevertheless, the Bronze Age lithics are easily contrasted with the heavily patinated Paleolithic stone artifacts in the study area, implying a separate postdepositional history (Runnels, Karimali, and Cullen 2003: 140–141). A significant indication of environmental impact on the flaked stone is the pervasive evidence of intense burning at some, but not all, sites. The unmistakable signs are the pattern of minute cracks on the surface (crazing), and the presence of “pot lid” fractures, or holes opened by thermal contraction. The fires seem to have been intense, but localized. It is not known whether the damage occurred at the time of use, or subsequently.

Chronological patterns

Certain provisional chronological patterns in the lithic assemblage may be suggested in spite of the scanty data. There is little or no evidence for the participation in exchange networks that operated in southern Greece in the EBA. The obsidian that was acquired from Melos and distributed to coastal and inland sites of Crete, the Cyclades, and mainland Greece is almost entirely lacking in southern Epirus. Similarly, there is only one fine flint pressure blade such as those imported to Lerna in the EBA. Moreover, the partially centralized production of obsidian tools at regional centers in the Aegean in the EBA finds no parallel in Epirus at any time in the Bronze Age. It is appropriate to point out that in northwestern Greece, the use of flaked obsidian probably continued after the EBA with little discernible formal change (Souyoudzoglou-Haywood 1999: 47), and this may be the case even in the Cyclades and southern Greece (Cherry and Torrence 1984: 12–15;

Parkinson 1999). Thus, there is no reason to assign an EBA date, *a priori*, to the obsidian blade fragment discovered by the Nikopolis Project.

The Epirote lithics do, however, bear a strong resemblance to other Greek assemblages of the MBA and LBA; there is, in part, a functional explanation for this similarity. The Lerna assemblage, beginning in EH III and extending through the MH period, looks more like the domestic tool kit of a farming village, and less like the remains of a production center specializing in the manufacture of obsidian tools (Runnels 1985: 390). With no evidence in southern Epirus for centralization or specialization before LH III, it is expected that such a pattern, involving the increased use of retouched and unretouched flakes as tools, would enhance the formal similarities of Aegean and Epirote assemblages on purely functional grounds. The existence of certain tool types among the survey finds, particularly sickle elements, reflects developments of the MBA and LBA elsewhere in Greece. Sickle elements made on pressure blades through EH II at Lerna were produced primarily on flakes beginning in EH III and increasingly in the MH period (Runnels 1985: 388). This pattern is repeated at Thessalian sites, where the utilization of bifacially worked flakes for sickle elements persisted until the end of the Bronze Age (Karimali 1994: 284). Epirote projectile points present a difficult problem, chiefly because of their fragmentary condition. Close parallels are found with LN and FN examples from central Greece and Euboea (Perlès 1994; Karimali 2000), and also with projectile points from MH and LH contexts (Blitzer 1992: 716–719). Unfortunately, the survey specimens are generally missing tangs, notches, and tips, all important diagnostic features. The best-preserved projectile point is the hollow-based MH–LH type mentioned above.

The chronological pattern suggested here conforms to the ceramic evidence, which indicates that contact with regions outside Epirus was virtually nonexistent before the transition from the MBA to the LBA. The scant evidence (the several projectile points mentioned above) for possible contacts toward the end of the Neolithic period may in the future be considered by comparison with the lithic remains at sites like Doliana in northern Epirus, which is dated securely to the Final Neolithic or FN/EBA transition (Douzougli and Zachos 1994: 17).

With the help of datable pottery and diagnostic tool types, it is reasonable to conclude that much of the lithic surface material comprises the remains of activity that may be ascribed to the Bronze Age in southern Epirus. Nevertheless, the chronological limits of this simple flaked stone technology remain fluid; it may have extended back into Neolithic times, and undoubtedly was used for some time after the end of the Bronze Age (Runnels 1982). On the basis of our analysis, this flaked stone technology was prevalent in, but not necessarily exclusive to, the Bronze Age.

Conclusions

The foregoing is a preliminary attempt to identify the nature of the Bronze Age flaked stone industry of Epirus. It is not yet possible to analyze the Bronze Age industry in detail, or even to identify all the sites on which the industry occurs. The tools and techniques used to manufacture Epirote lithics are not closely comparable to the known contemporary industries of Greece because evidence for the repeated and deliberate replication of standard tool types that define an industry are lacking. The Bronze Age lithic industry in southern and central Greece is characterized by a reliance on blade technology making use of imported materials. The Epirote flake industry contains few blades, and imported material is rare. The small pebble cores from which the flakes were struck, and the small number of tools that are typologically similar to types known outside Epirus, are nonetheless more representative of Bronze Age than Paleolithic, Mesolithic, or even Neolithic industries of the Mediterranean.

Selected Tools Typologically Diagnostic with Reference to Greek Types

The following brief catalogue describes tools, with one exception all of flint, that have been determined at this preliminary stage to be typologically diagnostic by comparison with known late prehistoric types elsewhere in Greece. The catalogue is intended to be representative of the types so far identified, and is therefore not exhaustive of all the specimens thought to belong to these types.

The entries are organized in the following way. Each artifact is identified with an accession number with either a **NST** or **TST** prefix. The NST (Nikopolis Stone Tool) prefix refers to items that were collected in the course of surface survey and entered as Nikopolis Project inventoried objects. The accession number that follows the NST prefix refers to the year in which the object was entered into the inventory, and a sequential number for that year (for an explanation of the Nikopolis Project inventoried objects system, see Wiseman 1994: 4). Artifacts designated with a TST prefix belong to lithic assemblages from selected Nikopolis Project survey sites that I inspected in the summer of 1995. These objects will ultimately receive NST designations. The provenience entries employ the location names and findspot identifiers presented in Chapter 4 (see Table 4.1), followed by the equivalent Nikopolis Project site or survey unit designation. Length (L.), width (W.), and thickness (Th.) are provided in centimeters. The brief descriptions that follow employ standard descriptive terms (e.g., Runnels 1985; Blitzer 1992; Kardulias and Runnels 1995). Finally, suggested chronologies are based on one or both of two criteria: the dates of typologically comparable artifacts elsewhere in Greece, and/or chronological ranges derived from strong spatial association with datable artifacts of other materials, chiefly pottery. In order to make explicit which criteria were used, the following symbols accompany the suggested

chronology: # signifies dating by typological comparison, and † indicates dating by internal association with objects in other materials.³

NST 92-5. Sickle element on a cortical flake with silica gloss, flint (Figure 6.3a)

Provenience: Galatas (N-19 = SS92-13), Bronze Age “hut”

L. 4.3, W. 3.3, Th. 0.9

Brown cortical flake with inverse denticulation on both edges. Heavily glossed (50%), gloss partially removed by later retouch. Proximal inverse concave truncation.

Chronology: Bronze Age (#, †)

NST 92-88. Type A sickle element on a pressure blade with silica gloss, flint (Figure 6.3c)

Provenience: Eli (IF-9 = SS92-19)

L. 3.5, W. 2.3, Th. 0.7

Medial segment of a pressure blade with irregular retouch and silica gloss.

Chronology: Neolithic–EB II? (#)

NST 92-89. Type B sickle element on a flake with silica gloss, flint (Figure 6.3d)

Provenience: Ayia Odigitria (IF-10 = SS92-26)

L. 4.5, W. 2.0, Th. 0.6

Complete rectangular sickle element on a grayish brown flint flake. Double truncation, backing, and denticulated edge with silica gloss.

Chronology: MBA–LBA (#)

NST 93-18. Sickle element on a flake with silica gloss, flint (Figure 6.3b)

Provenience: Grammeno (IF-11 = SS92-6)

L. 3.5, W. 1.6, Th. 0.6

Sickle element on a backed and truncated brown flint flake. Denticulation forms distinct teeth on which silica gloss is present.

Chronology: MBA–LBA (#)

NST 93-19. Sickle element on a double endscraper with silica gloss, flint (Figure 6.3e)

Provenience: Grammeno (IF-11 = SS92-6)

L. 2.4, W. 1.6, Th. 0.4

Sickle element on a complete brown flint flake with two endscrapers and one unretouched edge on which silica gloss is present.

Chronology: Bronze Age (#)

NST 93-21. Arrowhead base, flint (Figure 6.4f)

Provenience: Spilaion (N-12 = SS92-37)

L. 1.4, W. 2.4, Th. 0.3

Base of a bifacially flaked, rectangular arrowhead on whitish flint.

Chronology: Neolithic–Bronze Age (#, †)

NST 93-22. Arrowhead base, flint (Figure 6.4g)

Provenience: Spilaion (N-12 = SS92-37)



Figure 6.5 Notched flake, flint. Photograph courtesy Nikopolis Project.

L. 2.3, W. 3.0, Th. 0.6

Base of a bifacially flaked, rectangular arrowhead on brown flint.

Chronology: Neolithic–Bronze Age (#, †)

NST 94-3. Sickle element (?) on a flake, flint (Figure 6.3f)

Provenience: Koumasaki (N-8 = SS92-24)

L. 4.9, W. 3.5, Th. 1.1

Sickle element with two truncations (one partial) on a brown flint flake. One denticulated edge, no apparent silica gloss.

Chronology: Bronze Age (#, †)

NST 94-5. Sickle element on a flake with traces of silica gloss, flint (Figure 6.3g)

Provenience: Koumasaki (N-8 = SS92-24)

L. 2.9, W. 2.1, Th. 0.6

Sickle element on a rectangular, dark reddish brown flint flake. Double straight truncation, backing, and Clactonian denticulation. Traces of silica gloss on use edges.

Chronology: Bronze Age (#, †)

NST 94-7. Denticulated flake, flint (not pictured)

Provenience: Koumasaki (N-8 = SS92-24)

L. 2.8, W. 2.9, Th. 0.9

Rectangular flake of brown flint with two truncations and one denticulated edge.

Chronology: Bronze Age (#, †)

NST 94-9. Sickle element on a flake with silica gloss, flint (not pictured)

Provenience: Koumasaki (N-8 = SS92-24)

L. 4.6, W. 2.9, Th. 0.8

Sickle element on a fossiliferous, light brown flint flake. Double truncation, backing, and two irregular Clactonian denticulations with silica gloss.

Chronology: Bronze Age (#, †)

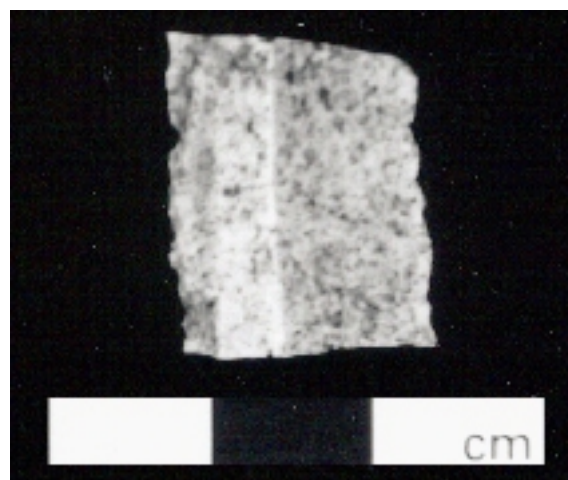


Figure 6.6 Retouched pressure blade, flint. Photograph courtesy Nikopolis Project.

NST 94-14. Hollow-based arrowhead, flint (Figure 6.4a)

Provenience: Pountas (N-9 = SS94-11)

L. 2.3, W. 1.3, Th. 0.5

Hollow-based (or *concave-based*) arrowhead of dark reddish brown flint with tip missing. Shaped by sub-parallel fine bifacial pressure retouch. Shallow basal notch, finely retouched.

Chronology: MBA–LBA (#, †)

NST 94-20. Arrowhead, flint (Figure 6.4b)

Provenience: Koulia (N-6 = W94-34)

L. 2.9, W. 2.6, Th. 0.5

Distal portion of a bifacially worked, triangular arrowhead on patinated flint. One side not completely worked.

Chronology: Late Neolithic–Bronze Age (#, †)

NST 94-21. Arrowhead, flint (Figure 6.4c)

Provenience: Koulia (N-6 = W94-34)

L. 2.1, W. 2.3, Th. 0.5

Distal portion of a bifacially worked, triangular arrowhead on patinated flint with complete retouch.

Chronology: Late Neolithic–Bronze Age (#, †)

NST 94-22. Arrowhead, flint (Figure 6.4d)

Provenience: Koulia (N-6 = W94-34)

L. 3.0, W. 2.7, Th. 0.6

Distal portion of a bifacially worked on patinated flint. Foliate shape.

Chronology: Late Neolithic–Bronze Age (#, †)

NST 94-23. Arrowhead, flint (Figure 6.4e)

Provenience: Koulia (N-6 = W94-34)

L. 4.9, W. 2.4, Th. 0.7

Distal and medial portions of a bifacially worked, triangular arrowhead on patinated flint.

Chronology: Late Neolithic–Bronze Age (#, †)

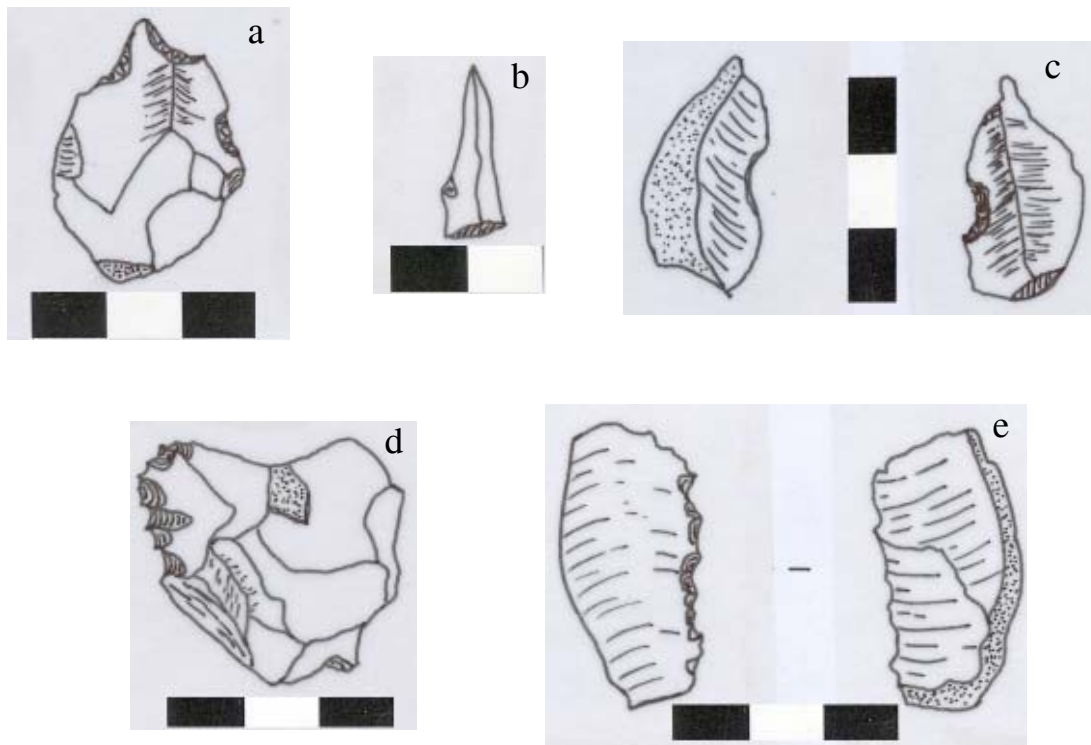


Figure 6.7 Assorted flint flake and core tools: a) perçoir on a denticulated flake; b) perçoir on a flake; c) notched piece on a cortical flake; d) scraper on a pebble core; e) retouched cortical flake.

TST 1. Notched flake, flint (Figure 6.5)

Provenience: Ephyra (E-3 = SS92-33)

L. 4.6, W. 3.0, Th. 1.2

Complete brown to light purple flint flake with a denticulated notch and light retouch on the opposite edge.

Proximal end truncated.

Chronology: Bronze Age (†)

TST 2. Retouched pressure blade, flint (Figure 6.6)

Provenience: Koulia Grove (N-7 = SS95-7)

L. 1.9, W. 1.5, Th. 0.4

Medial segment of a triangular/trapezoidal pressure blade on unpatinated white flint with brown speckling.

Chronology: Bronze Age (#, †)

TST 3. Perçoir on a denticulated flake, flint (Figure 6.7a)

Provenience: Ephyra (E-3 = SS92-33)

L. 3.4, W. 2.6, Th. 1.2

Perçoir formed by convergent retouch on a cream-colored, patinated flint flake. Light retouch on one edge.

Chronology: Bronze Age (†)

TST 4. Perçoir on a flake, flint (Figure 6.7b)

Provenience: Koumasaki (N-8 = SS92-24), Scarp 1

L. 2.3, W. 0.7, Th. 0.4

Perçoir on a light purple flint flake. Minute retouch on nonuse edge. Single truncation at the proximal end. Some “potholing” present, suggesting severe burning. Excavated from a mixed prehistoric/historical deposit in a scarp.

Chronology: Bronze Age? (†)

TST 5. Notched piece on a cortical flake, flint (Figure 6.7c)

Provenience: Ephyra (E-3 = SS92-33)

L. 2.9, W. 1.7, Th. 0.7

Notched piece; notch formed by percussion and subsequent denticulation. Heavy cortex on dorsal surface (50%).

Chronology: Bronze Age (†)

TST 6. Trapezoidal blade segment, obsidian (Figure 6.2)

Provenience: Koulia Grove (N-7 = SS95-7)

L. 1.2, W. 0.7, Th. 0.2

Medial segment of a straight-sided obsidian blade, trapezoidal in section. Made on translucent very dark gray

(Munsell 5Y 3/1) obsidian that is probably Melian.

Minute retouch on both edges.

Chronology: Bronze Age (#, †)

TST 7. Scraper on a pebble core, flint (Figure 6.7d)

Provenience: Kastriza (N-3 = SS94-27)

L. 3.5, W. 2.8, Th. 1.3

Scraper formed by the removal of multiple flakes from a flint pebble core. White flint with yellow and yellowish brown veining.

Chronology: Bronze Age (†)

TST 8. Retouched cortical flake, flint (Figure 6.7e)

Provenience: Skaphidaki (N-17 = SS93-20)

L. 3.7, W. 1.9, Th. 0.6

Cortical flake of light gray flint. Dorsal surface preserves cortex (10%), as well as impurities in the flint

LITHICS AND OTHER MATERIALS

Table 6.2 Material evidence other than ceramics and lithics, Nikopolis Project.*

<i>Site</i>	<i>ID</i>	<i>Burial</i>	<i>Stone wall(s)</i>	<i>Stone foundations</i>	<i>Daub</i>	<i>Burned earth</i>	<i>Shell</i>	<i>Animal bones</i>
Ayia Eleni	N-2		•					
Kastriza	N-3		•					
Koulia Grove	N-7			?				
Skepaston	N-11							•
Vouvopotamos	N-13				•	•		
Latomeion	N-16				•			•
Skaphidaki	N-17						•	
Galatas	N-19				•			
Ephyra	E-3	?						
Ammoudia	IF-1				?			
Eli	IF-9					?		

* Cases for which a Bronze Age date is highly uncertain are denoted by a question mark.

and a large flake scar. Inverse retouch on the right ventral edge.

Chronology: LBA (†)

Other Material Classes (Table 6.2)

Standing architecture and architectural features

Architectural features that can be positively attributed to the Bronze Age are rare in the study area (Table 6.2). They consist of standing architecture, chiefly walls associated with Mycenaean influence by the use of cyclopean masonry techniques, remains of daub building material, and burned earth features such as hearths. Detailed descriptions may be found in the appropriate site entries. Two cist graves were discovered in survey units, but both were damaged and robbed of their contents. Lacking grave furnishings, it is difficult to date simple slab-lined cist graves because the form persisted well into historical times, perhaps continuously to the Medieval period. One probable tumulus was discovered at the site of Ephyra (E-3); in form it resembles the tumuli that were in use in Epirus at the end of the Bronze Age and into the Iron Age. Because three tumuli are already known from Ephyra, the discovery of another one would not be surprising; on the other hand, a Bronze Age date for the feature could not be assigned confidently on the basis of the surface remains.

Bones and shell

No human bones were positively identified by the surface survey. A small number of contexts produced animal bone that was convincingly associated with Bronze Age artifacts (Table 6.2). In each case, the bones come from small to medium-sized animals that include ovicaprids and

unknown other species. The faunal remains have not been examined by an expert. The recovery of animal bones from excavated sites in Epirus is far more common than has been reported. References to faunal remains are made in passing, or they are not mentioned at all (e.g., Dakaris 1960b: 123). Recently, the value of these remains for addressing subsistence strategies of the Bronze Age has been realized (e.g., Zachos 1997), but to date no faunal assemblage of post-Paleolithic date has been analyzed and published. This situation will begin to change with a forthcoming report on faunal analysis from Doliana (Douzougli and Zachos 2002: 138, 143).

Since a substantial portion of the survey area is low-lying coastal territory, shells are a common feature that mark episodes of sea transgression in the distant past. Only in the roadcut stratigraphy at Skaphidaki is there solid evidence of human exploitation of marine shell resources (in this case, chiefly the cockle *Cerastoderma edule*), although many species must have been gathered routinely at coastal locations.

Metals

One of the most important developments in Late Bronze Age society in Epirus was the emergence of a thriving metallurgical tradition (see Chapter 3). Regrettably, none of the scraps of metal recovered by intensive survey can be identified positively as belonging to a Bronze Age artifact. The absence of evidence is not surprising in light of the fact that bronzes of Late Bronze Age date are found in Epirus almost exclusively in burials. Only a few burials were encountered in the survey, and none of these was accompanied by grave goods.

Endnotes

1. The discussion of lithics in this chapter is an updated version combining my original dissertation chapter 6 (Tartaron 1996); Tartaron, Runnels, and Karimali 1999; and more recent information.
2. The term “flint” is used here based on macroscopic examination alone; the true origin of the material as chert, flint, or other siliceous rock has not been investigated by microscopic means. Terms such as “silex” are often used generically in the absence of such information (Carter and Ydo 1996: 155).
3. Most descriptions are based on those made by C. Runnels and P. Murray as part of Nikopolis Project documentation.

Chapter 7: The Lower Acheron Drainage: Toward a Bronze Age Landscape

A proper understanding of the environmental context of human activity in the lower Acheron region in the Bronze Age can only come from the best available information on the state of the environment at that time. The processes that shape the geology, topography, vegetation, and resources of a particular environment induce changes over time, sometimes gradually and other times rapidly or even catastrophically. These developments are likely to be in part natural, timeless cycles of erosion, deposition, sea level change, global climate and temperature, and tectonic activity, and in part precipitated or accelerated by human intervention. The anthropogenic effects are apparent in Greece from the time of the earliest farmers to the present day, when “management” of the environment using modern technologies is visiting profound changes upon the landscape.

The research of the Nikopolis Project and others before it demonstrates that modifications to the landscape of the lower Acheron valley have indeed been extensive, and it is the purpose of this chapter to identify the changes and their sources, and by doing so to attempt to work back to a model of the appearance and characteristics of the landscape in the Bronze Age. The evidence will be sought from a variety of sources. Documentary evidence exists in descriptions of the region found in ancient sources such as Thucydides, Strabo, and perhaps even Homer; and in the accounts of early travelers, whose descriptions of the valley document its appearance in the centuries preceding our own. Topographic, geological, and geomorphological features form another source of information that may be observed on the modern landscape or in subsurface deposits. Elements of the Bronze Age landscape may be observed directly in road cuttings or through the use of deep cores, or inferred from patterns of erosion, deposition, and other processes. The archaeological record provides a third source of evidence from which certain aspects of the natural environment may be inferred, as for example the presence of deposits of floral and faunal remains at archaeological sites indicating some of the resources available to, and exploited by, Bronze Age inhabitants. The knowledge gained from this inquiry will be directed initially to problems of a topographic nature: the position of the coastline, rivers, and lakes; and the nature of the vegetation cover on the floodplain and surrounding hills. Recent research has increased the precision of information concerning the extent and timing of momentous changes in the landscape around the present mouth of the Acheron River.

It will be both desirable and possible to distinguish a range of ecological niches that were available for occasional, seasonal, or year-round exploitation. Since it is unlikely that local communities depended on a single resource base (agriculture, hunting, fishing, etc.), their subsistence strategies undoubtedly incorporated the resources of multiple niches, and the technologies required to extract

them. The quest for food and other staples of existence had both temporal and spatial dimensions; that is, the suite of resources was distributed over a certain territorial range, and subject to seasonal availability. A clearer understanding of the regional environment will increase the validity of models of territoriality and seasonality in resource exploitation.

Geology

The surface geology of the lower Acheron plain is dominated by limestone (carbonate) bedrock of Triassic to Eocene age, formed in shallow marine environments ca. 200 to 40 million years ago (mya) (Hellenic Institute for Geology and Subsurface Research 1966, 1967). The main components are white Sinian and Pantokrator limestones of Liassic (Early Jurassic) age, which mantle all of the hills rising in the plain, and a large portion of those surrounding it (Figure 7.1; Table 7.1). These limestones are cherty, furnishing a source of the siliceous nodules that were used by prehistoric tool makers (see Chapter 6). Triassic breccias with elements of crystalline limestone and dolomite are also common, notably on the southern and western hills bounding the plain. Less prevalent are Liassic dolomitic limestones, which are found in isolated pockets near the Ionian coast. The high slopes flanking the eastern side of the plain are composed primarily of younger Paleocene to Upper Eocene (ca. 66–36 mya) limestones with quartz and microfossil inclusions, and breccia facies.

The other pre-Holocene components of local subsurface geology are limited in extent (Table 7.1). A narrow coastal strip of Triassic gypsum lies within a band of breccia of the same age around Alonaki and points south. Remnants of Ionian Zone flysch, including basal flysch, upper flysch, and flysch of the central Ionian zone and the Ayioi Pantes-Paramythia formation are present in small exposures at the foot of the hills in the southeastern corner of the plain near the villages of Acherousia and Narkissos, and at higher elevations to the east. The flysch is composed mainly of soft, micaceous sandstones and shales with intercalated, thinly bedded biogenic limestones and marls (Besonen, Rapp, and Jing 2003: 206, 208).

The entire flat area of the plain is mantled in Holocene alluvium and, along the prograding shoreline, recent beach deposits (Table 7.1). The lower reaches of the hills on the eastern side of the plain are characterized by recent erosional fans and cones consisting of material transported from above during the Holocene.

The prevalence of limestone geology has important implications for human settlement in and around the plain. The permeable limestone allows the heavy rainfall to percolate through layers of bedrock, ultimately issuing in copious springs from crevasses or points of contact with impermeable rock. Many such springs are found on the

THE LOWER ACHERON DRAINAGE

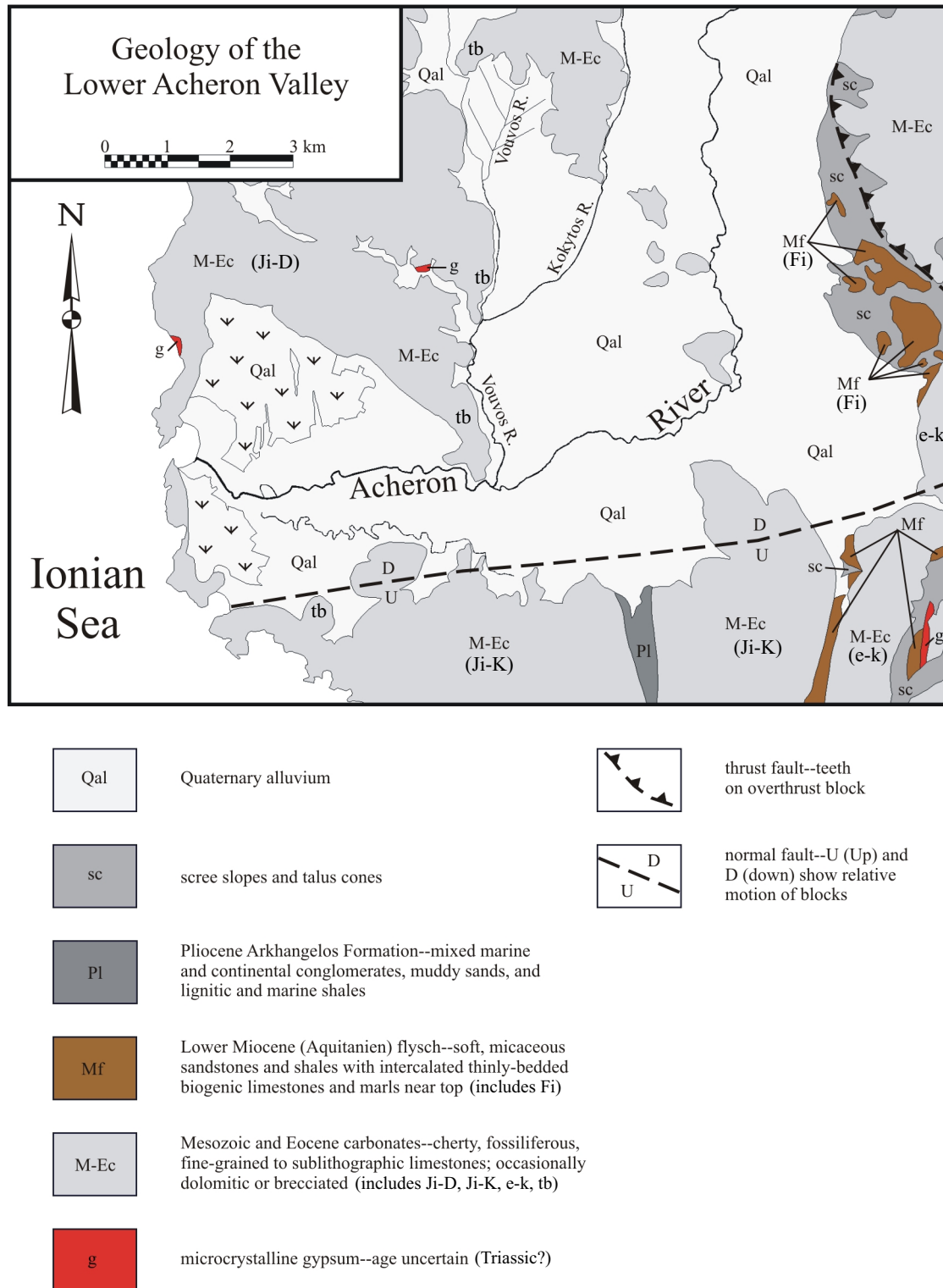


Figure 7.1 Simplified geology of the lower Acheron valley. Courtesy Mark R. Besonen.

slopes overlooking the valley, and they were surely attractive to communities in the Bronze Age, long before systematic manipulation of the water supply through devices such as irrigation was applied. Another important characteristic of limestone is its solubility, which gives rise to the solution features of a karstic landscape, including caves or caverns, dolines, and poljes (Runnels and van Andel 2003: 57–63). Caves in Epirus are mostly small,

but many show evidence of intensive use in prehistoric times (e.g., Klithi cave: Bailey 1988, 1997). Dolines and poljes are subsidence features caused by the solution of underlying layers of limestone bedrock. Poljes are extensive occurrences that become fertile wetland ecosystems in and of themselves (Figure 7.2). Because they lack outlets for the drainage of water and sediment, permanent or seasonal lakes form and marshy conditions

THE LOWER ACHERON DRAINAGE

Table 7.1 Main geological formations of the lower Acheron valley.*

<i>Symbol</i>	<i>Description</i>	<i>Occurrences</i>
al	recent fluvial alluvium and beach deposits	all of level area of the plain
sc ₁	recent erosional fans and cones	on slopes around and south of Skepaston; in ravines south of Kanallakion; on lower reaches of eastern hills bordering plain from Narkissos to Vouvopotamos
Ji–D	Lower–Middle Liassic dolomitic limestones with traces of gravels	on coastal ridges: Glossa, Ayia Eleni, Laspotopos; portion of ridge W of Mesopotamos village, and Kephali ridge to the northwest
Ji–K	Lower–Middle Liassic Sinian and Pantokrator limestones	elevations bounding plain to the south: Laspotopos, Koumasaki, Spilaion, Valanidorrachi, Tsouknida, Pountas; all of small hills rising from plain; upper reaches of eastern slopes from Narkissos to Vouvopotamos; ridges on western side of plain: Koroni, Koulia
e–k	Paleocene to Upper Eocene sublithographic limestones with quartz, microfossils of <i>Globigerines</i> and <i>Globorotalia</i> ; microbreccia	eastern hillslopes southeast of Kanallakion, bordering plain west of Skepaston
tb	Triassic breccias with elements of crystalline limestone; limestones and dolomites with powdery gypsum cement	coastal strip running from Koumasaki to west of Loutsas; inland strip from east of Tsouknida to Hochla; main area of Ephyra-Nekyomanteion ridge; all of the heights around Themelo; west of Kastriza
G	Triassic gypsum	narrow coastal strip within band of Triassic breccias at Alonaki and points south
1Fi, 2Fi–m ₂ , 3Fi, Fi	Ionian zone flysch	preserved only as small pockets: foot of eastern hills near Acherousia and Narkissos; at higher elevations near Kato Skaphidoti; near Glyki

* Sources: Hellenic Institute for Geology and Subsurface Research 1966, 1967; Besonen, Rapp, and Jing 2003

prevail, attracting birds and other animals to the water and rich vegetation. The lure of a year-round supply of water, plants, and animals must have beckoned humans as well (Horden and Purcell 2000: 186–190; Rothaus et al. 2003: 38–40). Bronze Age activity was demonstrated at poljes in the Nikopolis Project survey area, such as those at Cheimadio (Figure 4.17) and north of the Kastriza site. Their potential as rich agricultural land was realized, in the case of Cheimadio, where a large settlement of Hellenistic and Roman times shows the hallmarks of an agricultural town. Today, both of these poljes have been drained and are extensively cultivated.

Configuration of the Bronze Age Coastline

It has long been known that a wide bay once immersed the marshy area surrounding the present mouth of the Acheron River on the coast of the Ionian Sea (Dakaris 1971a: 5). Ancient sources beginning in classical times inform us that several hundred ships could be moored in the bay: Thucydides (1.46) reports that the Corinthians and their

allies anchored 150 ships there before the Battle of Syvota in 433 B.C.; from Cassius Dio (50.12.2) we learn that Octavian brought his fleet of 250 ships to port in the bay before the decisive battle off Actium in 31 B.C.; and still in A.D. 1084, a large fleet under the command of Robert Guiscard of Normandy was able to find anchorage in the bay (Anna Komnena, *Alexiad* 4.33). Other descriptions of the bay are found in Strabo (7.7.5) and Pausanias (8.7.2). Another source of information are maps of recent centuries, drawn primarily by Venetian, French, and Turkish cartographers in the 14th–18th centuries (e.g., Savvidis and Karabelas 1991: fig. 4). While all of these depict an enlarged bay, their accuracy of scale is either in doubt or not sufficient to render to the modern landscape. Dakaris (1958a: 110) offered, as proof of the extent of an ancient bay, a boring made some 150 m east of the confluence of the Vouvos and Acheron rivers, in which a layer of sand and marine shells was discovered at 17.5–18.0 meters below the modern surface. This layer was not dated, however, and thus could shed no light on the date of the marine transgression to that point.



Figure 7.2 View of Kalodiki polje near the village of Morphi. Photograph courtesy Nikopolis Project.

Geological and archaeological data from the Nikopolis Project and in other recent studies provide new precision in the chronology and morphology of the bay and the Ionian coastline. In the discussion that follows, it is important to make a clear distinction between the Ionian coastline of Epirus, and the shoreline of the ancient bay of Glykys Limin, as they have independent evolutionary histories.

Sea level change on the Ionian coast

Coastline evolution involves changes in relative sea level that reflect global and regional processes, including eustatic sea-level change and isostasy, as well as vertical tectonic processes, which may be quite localized. Local uplift and subsidence can be the most significant factors in determining the configuration of the coastline at a given place, and in the case of the lower Acheron valley, the filling in of the basin by sediments proves to be more relevant than global or regional trends for the formation and evolution of the embayment over time (Besonen, Rapp, and Jing 2003: 208).

A local sea-level curve is available for the Preveza–Acheron coast (Figure 7.3; Runnels and van Andel 2003: figs. 3.23, 3.24), based on a recently published isostatic/hydrostatic compensation model by Kurt Lambeck (1995, 1996). Lambeck's calculations for Kavalla (on the northwestern Aegean coast) were used as a baseline because of similar continental location and distance to the former icecap. The glacio-hydro-isostatically corrected curve for the Preveza–Acheron coast shows that the sea had virtually reached its modern level by ca. 6000 BP, and afterward continued only gradually to rise to present level. A plot of deglaciation shores on the Ionian coast over time (Figure

7.4) shows that already by 10,000 BP, it was quite close to its present position. It had previously been demonstrated that tectonism has not altered relative sea level detectably on a regional scale (although local occurrences are potentially significant) since the Bronze Age (Waters 1994). The obvious implication of these data is that the present Ionian shoreline in the neighborhood of the Acheron mouth gives a fair indication of its appearance throughout the Bronze Age (in geological terms, ca. 5000–3000 BP). Because the western limestone range of coastal Epirus plunges in most areas steeply to the sea, modest sea level rise is unlikely to have submerged many topographic features.

Empirical evidence indicates that relative sea level may have risen 1.5–2.0 m at some locations on the coast of the Preveza nomos since the 4th century B.C. Hammond (1967: 42) observed building foundations submerged to that depth at Actium, Mitikas, and elsewhere. A similar increase was postulated for the northern coast of the Ambrakian Gulf (Dakaris 1972a: 5–6). Although these observations are roughly correct about the change in *relative* sea level since antiquity, it was tectonic movement, sediment supply, and compaction of preexisting sediments, not absolute sea level rise as Hammond believed, that caused the changes (Jing and Rapp 2003: 193–194).

Local situations are predictably more complex. An extensive program of geological coring and geomorphological study by the Nikopolis Project has clarified long-term coastal evolution throughout the survey area (Jing and Rapp 2003; Besonen, Rapp, and Jing 2003). David Waters (1994) showed that although much of the Epirote coast has been uplifted since the Pliocene, the lower

THE LOWER ACHERON DRAINAGE

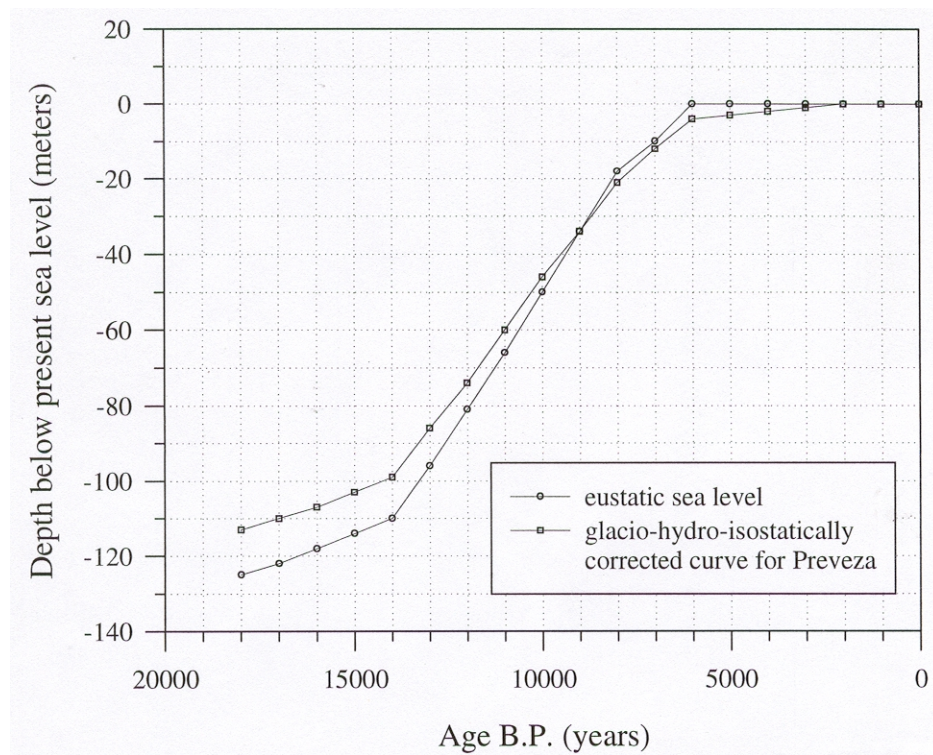


Figure 7.3 Glacio-hydro-isostatically corrected relative sea level curve for the southwestern Epirote coast. Courtesy Tjeerd van Andel.

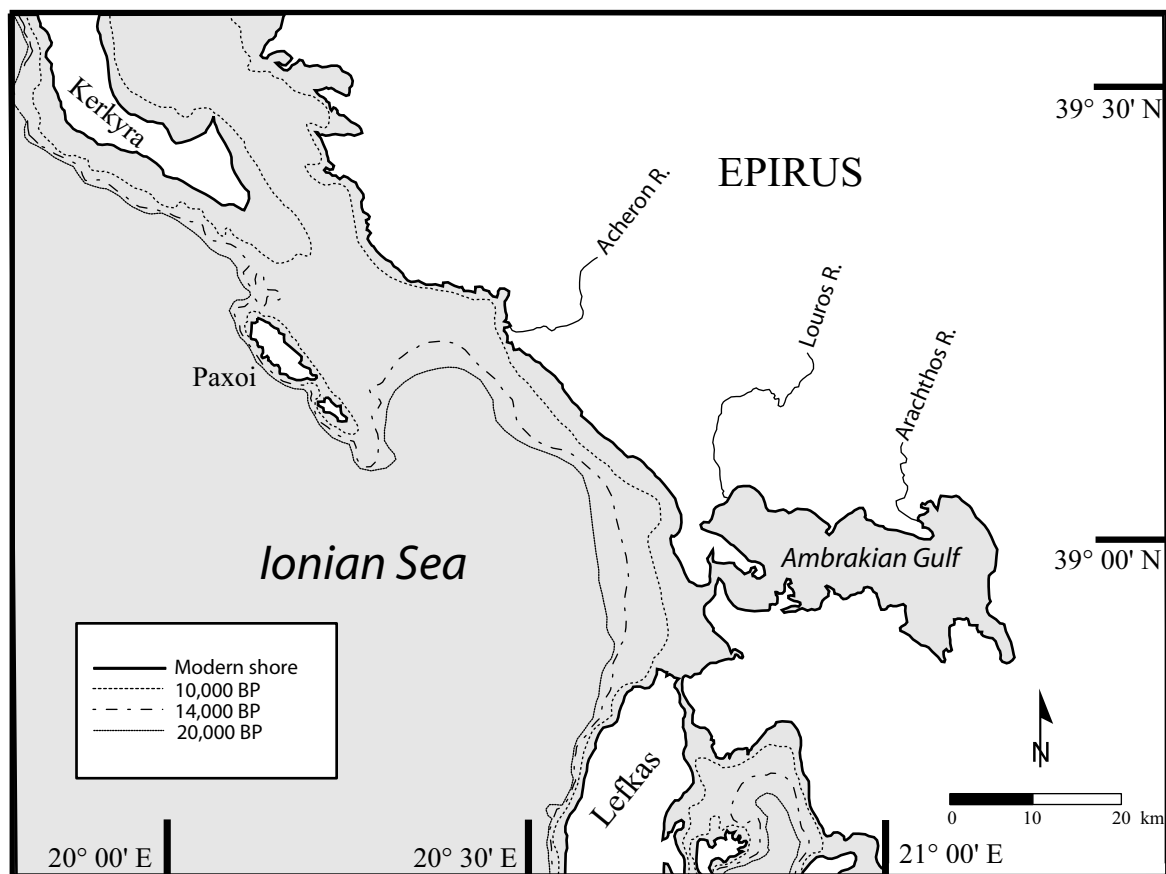


Figure 7.4 Hypothetical deglaciation shoreline map for southwestern Epirus. Adapted from information provided by Tjeerd van Andel.

THE LOWER ACHERON DRAINAGE

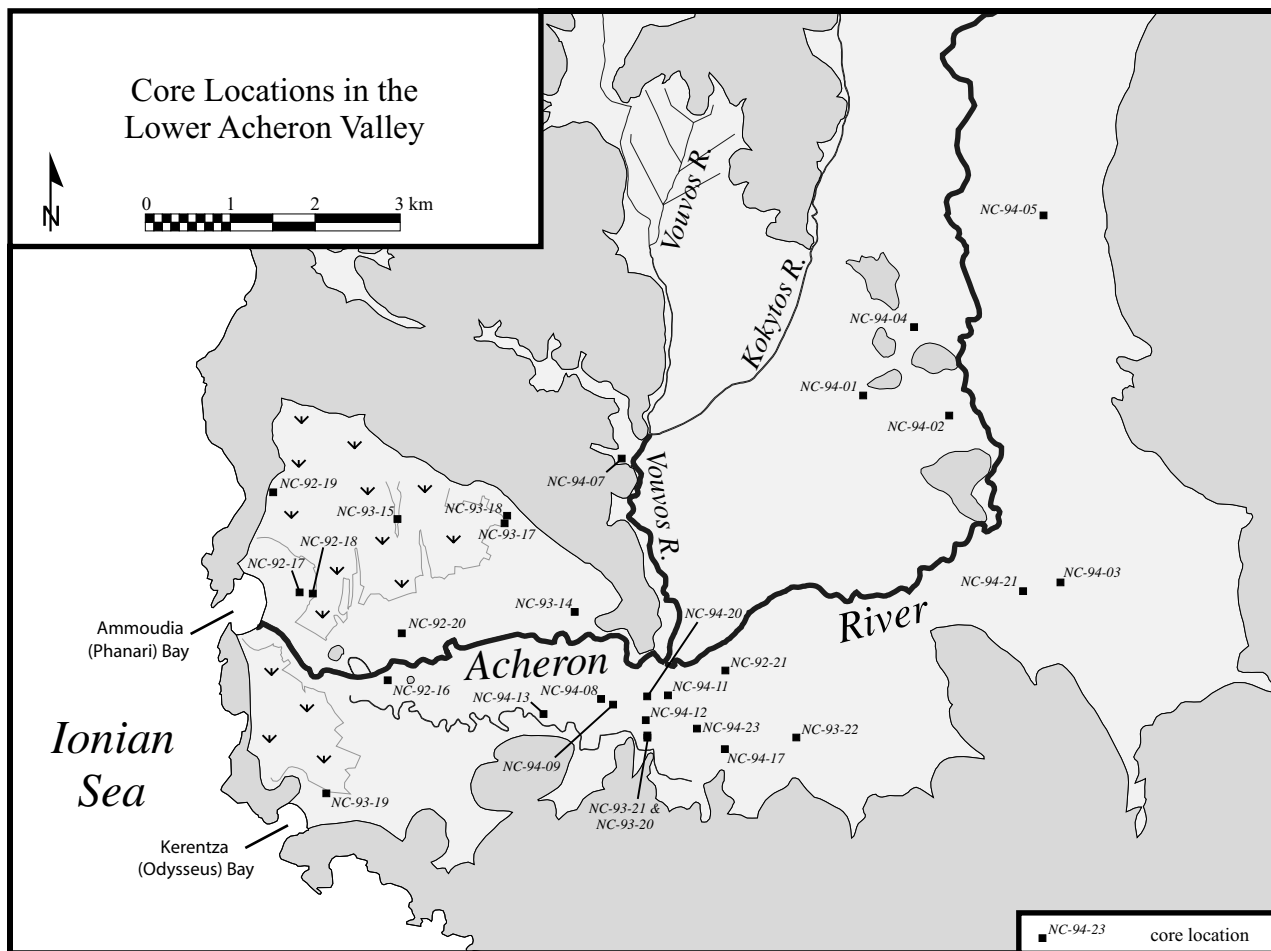


Figure 7.5 Map of the lower Acheron valley, showing locations of geological cores. Courtesy Mark R. Besonen.

courses of some rivers, notably the Acheron and the Thyamis, are subsiding, resulting in thick Quaternary sedimentation. At the Acheron mouth, Waters noted subsidence of the alluvial bottom, but a wave-cut platform on the northern side of the Phanari Bay at 1.7 masl shows uplift of the limestone valley walls. Besonen and colleagues identify basin infilling and other sedimentary processes as most salient in the progradation of the shoreline at the river mouth over time (Besonen, Rapp, and Jing 2003: 225–227). The processes that have effected the gradual infilling of the bay with sediment (see discussion of hydrology below) have counteracted, and in fact overwhelmed, the slight increase in absolute sea level.

Extent of the bay in the Bronze Age

A principal objective of the Nikopolis Project's program of geological coring in the lower Acheron plain was to determine the changing extent of the marine embayment over time (Besonen 1997; Besonen, Rapp, and Jing 2003). Between 1992 and 1994, 28 cores were placed in the low-lying terrain of the putative ancient bay (Figure 7.5). The cores were analyzed for microfauna, organic carbon and carbonate, and grain size distribution; and eight radiocarbon dates provided absolute chronological control for the evolution of key depositional environments. Together, these

data form the basis for a general diachronic reconstruction of the bay.

Figure 7.6 presents a hypothetical reconstruction of the position of the Bronze Age shoreline. Two cores in particular, NC94-17 and NC94-23 (Figure 7.5), establish the minimum penetration of the sea, several hundred meters east of a constriction of the valley formed by the opposing ridges of Mesopotamos (Ephyra/Nekyomanteion) and Tsouknida. The two cores possess a similar stratigraphy. Beneath a disturbed/plowed topsoil, a lacustrine deposit characterized by greenish gray silts and clays and fresh-water microfauna corresponds to the western portion of the Acherousian Lake, which formed in antiquity and was finally drained in the early 20th century. The lake deposit was preceded by delta top marsh, consisting of interbedded peat and peaty clay with fresh water microfauna. The lowest deposits reached (to a maximum of 12 m depth) consisted of greenish gray silts and clays and brackish water microfauna, characteristic of a delta front environment, and signaling the transition from a shallow fresh-water to a brackish-water environment. Here, fresh water from the Acheron River mingled with saline sea water in a broad estuary. Peat extracted from the bottom of the peaty zone of core NC94-23 returned a radiocarbon date of 3700 ± 60 BP (Beta 80534, calibrated to approximately 2100 B.C.:

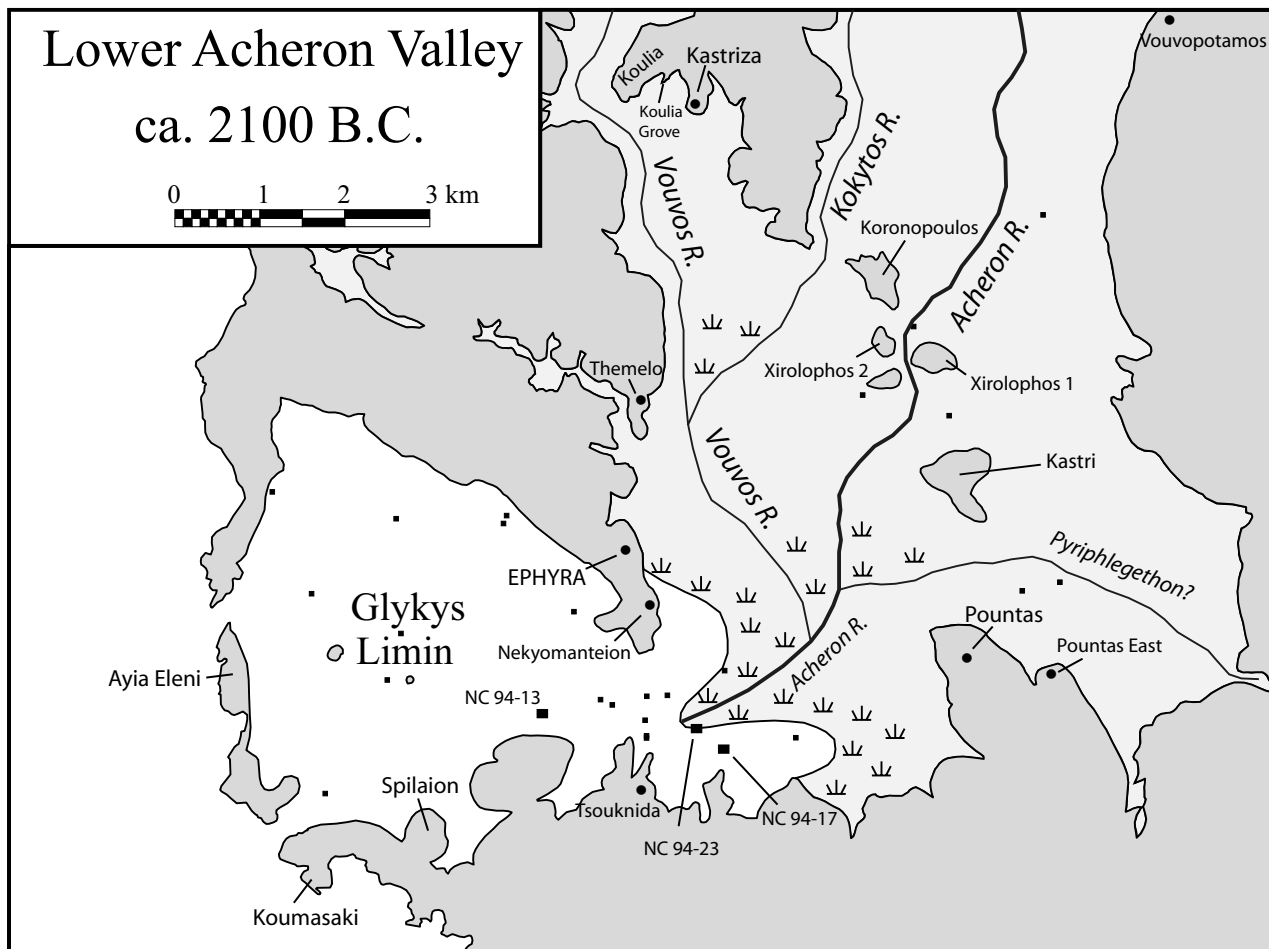


Figure 7.6 Reconstruction of the bay and its environs in the Bronze Age. Important Bronze Age sites are indicated, as are three crucial geological cores, NC94-13, NC94-17, and NC94-23. Base map courtesy Mark R. Besonen.

Pearson and Stuiver 1993), placing the shoreline at this spot, some 5.5 km east of the present shoreline, in the transition between the Early and Middle Bronze Ages. The shape of the eastern shore of the bay is not precisely known; the reconstruction shows a northwest–southeast orientation hypothesized on the basis of topographic features.

The maximum transgression of the sea appears to have occurred between 7000 and 6000 BP (5000–4000 B.C.), and therefore the shore was surely farther to the east before the beginning of the Bronze Age. Wave-cut cliffs on the southwestern face of the prominent Pountas ridge probably mark the limit of marine transgression during the Holocene. The position of the shoreline must have remained relatively stable during the Bronze Age after 2100 B.C., because a second radiocarbon determination (from core NC94-13) shows that the shore had migrated westward not more than 2 km in more than three millennia from 2100 B.C. to A.D. 1100, contrasted with 3.5 km in less than a millennium from A.D. 1050 to the present.

Remarkable evidence of the incremental progradation of the shoreline toward the sea is visible to the naked eye, best viewed in aerial photographs or from aside the modern Preveza–Parga highway north of the Acheron mouth (Figure 7.7). A series of roughly concentric sandy ridges

and swales marks the progression of the shoreline toward the tiny modern bay of Ammoudia. The available evidence points to recent formation of these fossil beaches, perhaps in no more than a few centuries. The preservation of the beaches on the landscape (i.e., the lack of overlying alluvial deposits) suggests that they formed after the flow of the Acheron River was controlled by irrigation and other hydraulic technologies that limited flooding. The village of Ammoudia was built directly on fossil beaches early in the 20th century, and several middle-aged residents informed us that their grandparents spoke of a time before the foundation of the village, when the coastline was well inland of its present position. The settlement was originally known as Splantza; in 1930, Hammond spent two days there, describing it as “a tiny hamlet of wattle and daub huts on a sand-spit between a brackish marsh and the round bay of the Acheron mouth” (1983: 18). In the near future, the very shallow Ammoudia Bay will close entirely and become part of the Ionian coastline. The infilling of the bay has been accomplished in recent times largely by the deposition of sands and other sediments by the Acheron River, accelerated at least since the Ottoman period by land clearance, farming, and grazing. A smaller contribution to beach formation has been made by longshore deposition—the deposition of sediments transported parallel to the beach by the action of waves and currents.

THE LOWER ACHERON DRAINAGE

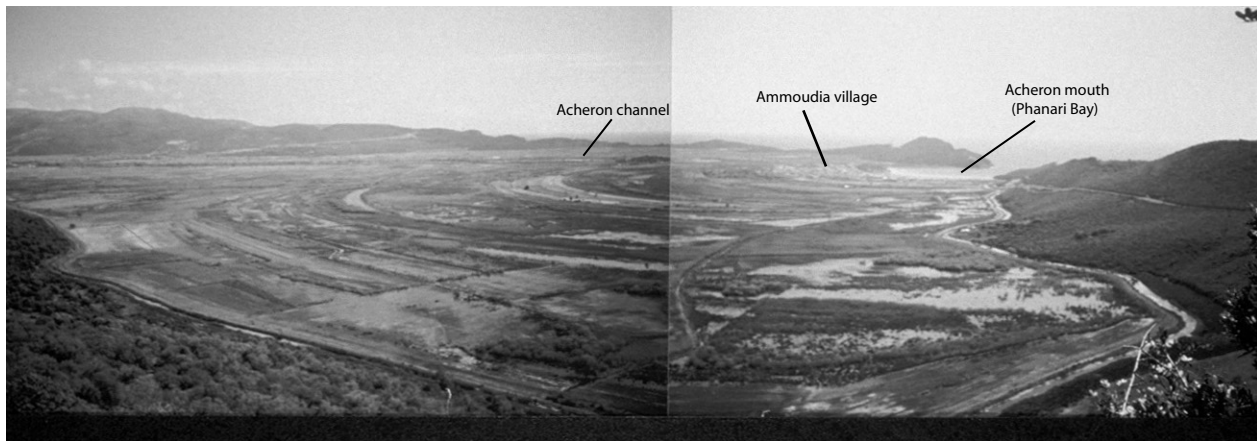


Figure 7.7 Panoramic view of the mouth of the Acheron River, facing south-southwest, showing concentric fossil beaches indicated clearly by ridges and swales. This entire wetland was part of Glykys Limin bay in the Bronze Age.

Several archaeological survey tracts walked across progressively earlier fossil beaches failed to turn up evidence of human activity before modern times (with the exception of a single handle probably from a Late Antique amphora). Although this finding provides only negative evidence, it does not contradict in any way the results of the geomorphological study.

Hydrology and the Formation of the Plain

The entire level plain of the lower Acheron is alluvial in origin, formed primarily by the action of two rivers, the Acheron and the Kokytos/Vouvos, over many millennia (Figure 7.5). Abundant sources of water supply the two river systems: copious springs that give them birth, and replenish them in the plain; and heavy rains of late fall to spring that bring water and sediment from the slopes in great torrents. Prior to the 20th century, these rivers overflowed their banks annually in the lower Acheron plain, giving rise to a wide floodplain that was wetland for much of the year (Leake 1835 [IV]: 51–53).

The rainfall that supplies water to the rivers is greater in Epirus than elsewhere in Greece, as a result of the mountain barriers and prevailing westerly winds (Hammond 1967: 17, 39; Dakaris 1972a: tab. 2). Ancient authors sometimes mentioned the heavy rains of Epirus—Aristotle (*Meteorologica* A 14.15) placed the flood of Deukalion there, and Procopius (*De Aedificiis* 4.1) wrote of notable inundations. Strong *kephalovrysia* issuing from the limestone ridges bounding the plain prevented the rivers from drying up in the summer months; some of the rivers are typically dry in their upper courses in summer, but flow year-round in the lower Acheron plain.

River systems in the modern context

The Acheron River rises from springs and runoff in the southern fringes of Mt. Tomarus, south of Dodona. The river flows south, dissecting the rugged Suliote mountains and gathering water and sediment from the karstic slopes, before finally plunging through deep gorges into the plain

by the village of Glyki. Once on the plain, the river meanders for several more kilometers, discharging excess water and sediment onto the floodplain (or did so until much of the water was drawn off upstream for aqueducts and irrigation canals), and ultimately empties into the Ionian Sea. In the modern context, the river is replenished by the waters of the Kokytos/Vouvos system southeast of the rocky eminence on which the Nekyomanteion is perched before flowing the final 5–6 km to the sea. The mouth of the Acheron has migrated over time, as is shown by a second gap at Kerentza or Odysseus Bay, two km south of the present mouth, where at some time in the distant past, the river penetrated the coastal ridge and flowed into the sea.

There exists some confusion concerning the names of the two other rivers that provide water to the plain today: one, originating in the vicinity of Paramythia, has carried the name Vouvos in recent centuries, but is reckoned by Leake (1835 [I]: general map of northern Greece) and Dakaris (1972a: fig. 7) to be the Kokytos of Homer and later authors of antiquity (*Odyssey* 10.487; Pausanias 1.17.5). Modern topographic and geological maps generally designate this river the Vouvos, in some cases supplying Kokytos as an alternative name. The second river, rising in the hills about Margariti, flows into the lower Acheron plain from the west through a side valley of the plain proper, and empties into the Vouvos/Kokytos just south of Themelo village (the combined river continues south to its confluence with the Acheron). This river is also named Vouvos on topographic maps. (Oddly, a village of the *eastern* slopes of the valley, near the site of a large Bronze Age settlement, is named Vouvopotamos—a marvelous illustration of the migration of toponyms in the area mentioned also by Leake [1835 (I): 233].) The most reasonable solution seems to me the one adopted by Dakaris (1972a: fig. 7): the river arising in Paramythia takes its assumed ancient name of Kokytos, while the river flowing into the plain from Margariti is called the Vouvos. I shall refer to the rivers in like manner.

The Kokytos, then, originates in the mountains northwest of Paramythia, and flows in a southerly direction, receiving

most of its water supply from the steep slopes lining the wide valley. Upon joining the plain, the modern channel of the Kokytos hugs the western hills, turning to the southwest below Koroni to cut off the side valley of the Vouvos, and receiving the waters of the Vouvos south of Themelo. As in Leake's time (1835 [IV]: 52–53), the river is dry in summer in the valley of Paramythia, but is supplied with water in all seasons in the lower Acheron plain.

The Vouvos River rises in the heights surrounding the village of Margariti, and flows in a southeasterly direction toward the Kokytos. It created a small alluvial floodplain west of Koroni village, now isolated from the rest of the lower plain by the channel of the lower Kokytos, which at some time in the past built a levee that constricted the flow of the Vouvos through the center of its valley. Today, the bed of the Vouvos is normally dry, except where it is fed by springs and runoff north and west of the village of Themelo. It appears also that the upper and lower courses of the river have been separated by alluvial/colluvial material where there is a severe constriction of the valley formed by the opposite ridges of Koulia and Vlachika, approximately 3 km northwest of the village of Koroni. This was not always the case: in the map of Epirus accompanying Leake's (1835) study, and even more recently in Dakaris' work on Cassopaia (1972a: fig. 7), the river is depicted as flowing uninterrupted through the middle of its floodplain right up to the confluence with the Kokytos. The present channel hugs the western hills in part because of the levee built by the Kokytos, which in the past may have swung westward toward the Vouvos. Even in the time of Leake, the upper course would have been dry in the summer, but the lower drainage between Themelo and Koroni was likely a perennial stream fed by springs in the drier months.

Rivers and drainage in the Bronze Age

The geological coring project provided significant information regarding the fundamental hydrology of the floodplain in the Bronze Age. The most notable determinations are: 1) the predominance of the Acheron River in shaping the plain and bringing sediment to the sea; and 2) the absence from the Bronze Age landscape of Lake Acherousia, which may have formed after ca. 800 B.C. (Besonen, Rapp, and Jing 2003).

In Figure 7.6, the Acheron is depicted as the main river in the system at ca. 2100 B.C., flowing northeast to southwest and emptying into the wide marine embayment. The united Kokytos/Vouvos River is shown to join the Acheron approximately 6 km from the Ionian coast, some 2 km east of the modern confluence. The Acheron played the primary role in forming the plain because of its greater volume, higher velocity, and heavier sediment load relative to the Vouvos/Kokytos system. The latter system discharged water and sediment into the Acheron, which deposited gravels, sands, and silts into the embayment. All three rivers (the Acheron, Kokytos, and Vouvos) flooded their banks, laying down alluvium in their floodplains.

A fourth stream shown emanating from a ravine in the eastern slopes northeast of the village of Kanallakion may have become the Pyriphlegethon of the *Odyssey* (10.486), which was rumored to persist as a rumbling subterranean flow until the middle of the 20th century (Dakaris 1960a: 204; Hammond 1967: 66). The fans and sediments of this stream may have prevented the sea from transgressing farther to the east. The accuracy of the reconstruction of rivers and coastlines in the Bronze Age is limited by the location and extent of the geological cores (Figure 7.5). Precise locations for the Vouvos/Kokytos and Pyriphlegethon channels are not possible; nor is the maximum eastern transgression of the embayment precisely known, although the core data demonstrate that part of the shoreline at 2100 B.C. lay in the vicinity of cores NC94-17 and NC94-23.

Cores taken at many locations in the lake bed indicate that the Acherousian Lake did not form until sometime between ca. 2100 B.C. and 433 B.C., when it was first mentioned as a feature of the local landscape by Thucydides (1.46). The lake is not mentioned in Circe's description of the kingdom of Hades in the closing lines of Book 10 of the *Odyssey*; instead, Odysseus is told that two tributary streams, Kokytos and Pyriphlegethon, flow into the main river, Acheron. Whereas it is unwise to place much faith in the historical accuracy of Homeric topography, it is just possible that the epic fails to mention such a conspicuous feature of the landscape simply because it did not yet exist (or was not yet conspicuous) at the time of the epic's composition in the 8th century B.C. (or later if verses describing the Acheron region were interpolated at a later date). A likely mechanism for the formation of the lake, however, did emerge from the geological study (Besonen, Rapp, and Jing 2003: 227–233). In the centuries after 2100 B.C., the Acheron channel pushed southwest into the marine embayment by cutting into its own delta and building up a natural levee. Eventually, the channel and its levee reached the southern boundary of the plain near Tsouknida, cutting off the low-lying land on the eastern side of the narrow constriction in the valley from that on the west. As a result, a shallow, closed depression formed behind the channel/levee system (to the east). Over time, water supplied by the Acheron River impounded in the depression, creating the Acherousian Lake.

Cores taken at the Bronze Age sea/shore transitional zone and others taken farther upstream indicate a wetland terrain in the floodplain of the Acheron and Kokytos rivers. A modern analogy may be found in the reed marsh near the village of Ammoudia. Marshy terrain was transformed seasonally—through winter torrents and spring flooding—into numerous small, shallow lakes. To arrive at a clearer picture of what the plain must have been like, it is worth quoting at some length the description of the plain as seen by Colonel Leake on April 30, 1809:

This plain of Fanari, or Frari as it is called by the Albanians, is every where so marshy, that except at Kanalaki and Potamia, all the

habitations of those who cultivate the plain are situated upon the adjacent hills. Besides the Gurla, or river of Suli [Acheron], and the Vuvo [Kokytyos], which overflow their banks in the rainy seasons, there are sources issuing from the foot of the mountain below Artissa, and others still more copious which form the marsh near Kastri. Even the upper part of the plain towards Glyky is still at this advanced period of the spring in a swampy state, from the mere effect of the winter torrents from the hills. The river Gurla ... leaves the foot of the hill of Kastri on its right bank, turns towards the western height and enters the marshes, which at the present season begin a little below Kastri and Kanalaki, extend to within a short distance of the sea, and occupy all of the eastern side of the plain. In summer they are much diminished, but are never entirely dry, and some large lakes still remain in several places ... , particularly one not far from the sea, and another to the south-east, near the foot of the mountains which there rise abruptly from the level. These lakes furnish a constant and abundant supply of fish. The river of Suli having traversed the marsh, is joined below it by the Vuvo about three miles above the junction of the united river with the sea in the bay of Splantza. The Vuvo ... is dry in summer in the valley of Paramythia, but in the plain of Fanari there is water at all seasons, supplied probably from sources at the foot of the western heights. (1835 [IV]: 51–53)

Excepting the much broader marine embayment and the altered positions of the river channels in later prehistory, it might be imagined—and no contradiction is found in the data from the cores—that the scene observed by Leake in April, 1809 mirrors fairly well the general condition of the plain in the Bronze Age. Several salient points emerge from Leake's observations. As this passage suggests, the Acherousian Lake, after having expanded to the east over time, had retreated again by Ottoman times. In view of the shallow bedrock, the lake must likewise have been shallow, with the result that an increased sediment load (such as is suggested for the Roman and Ottoman periods) or isolation from floodwaters caused the lake to shrink. The plain below Kastri was therefore returned to a cycle of shallow lakes in the wet seasons, and marshy terrain for the balance of the year. This cycle was governed by the water supply, which as Leake suggests was furnished by annual flooding of the Acheron and Kokytyos rivers, and by numerous springs near Kastri and further south.

That the plain became significantly drier in the summer and early autumn is made clear by certain observations made by Leake regarding the agricultural production of the region (1835 [IV]: 54). Maize was sown in the marshy southern plain in May and June and reaped in October, but

it was necessary to irrigate the fields by means of canals cut into the river channel, “when the dryness of the season render[ed] that process necessary.” The portion of the plain north of Potamia, extending to Glyki, was always drier, although it too was marshy in the wettest months of the year, as Leake noted in the long passage quoted above. Whereas rice and maize were the chief crops of the south, flax and wheat were grown in the drier upper part of the plain. Sheep and cattle in great numbers grazed the whole of the plain in the season of Leake's visit.

The sediment load carried by rivers is furnished in large measure by the weathering and downslope movement of material from the valley sides, although erosion by a river of its own channel and the sediment dumped by tributary streams may also make important contributions. In the fluvial ecology of southwestern Epirus, heavy rainfall must always have induced a natural process of weathering and transport of loose sediments downslope into streams. Much of this material was ultimately deposited in flood waters and deltas, building alluvial landscapes such as the lower Acheron plain. The steady process of erosion and deposition is sometimes accelerated, causing a sudden increase in sediment delivery to river systems. The agency of such episodes may be natural or human. Potential instigators of natural sediment increase include heavy rainfall, forest fires, or a change of land cover caused by a climatic shift. In each case, the soil normally held in place by vegetation is rendered vulnerable to stripping during heavy rains and subsequent runoff. Truly catastrophic soil loss usually takes the form of debris flows typified by chaotic masses of boulders, cobbles, sand, silt, and clay, lacking any sign of sorting or bedding. Debris flows of this sort may also have an anthropogenic origin in destabilization of the soil by means of forest clearance (cutting or burning), excessive grazing, or abandonment of slopes on which agriculture was practiced.

In the Argolid and southern Argolid, the issue of catastrophic soil loss was examined carefully through geological and archaeological data (van Andel, Runnels, and Pope 1986; van Andel and Runnels 1987: ch. 8; van Andel, Zangger, and Demitrack 1990; Runnels 1995, 2000). In the southern Argolid, seven episodes of massive slope erosion were identified in the Holocene sequence, of which two, one at the end of the Early Bronze Age, and another during the Middle Byzantine period, were caused by sheet erosion attributed to rapid, careless clearance of slopes by farmers without attention to soil conservation. Other debris flows, including a modern, ongoing occurrence, may be blamed on widespread grazing and the collapse of agricultural terrace systems. The general conclusion of these studies was that human neglect or abuse of the landscape has caused periodic, catastrophic soil loss from cultivated slopes, resulting in regional ecological degradation. This interpretation has been criticized for what some see as poorly dated sequences that leave ambiguous the causal relationship between humans and episodes of sedimentation, and for the extrapolation from a few samples to broad, regional patterns (Bintliff 1992; Endfield 1997;

Whitelaw 2000). Although this debate remains unsettled, there is a continued need for building local, well dated and correlated sequences as a prelude to making wider inferences about agency in regional human–land relationships over time (e.g., Krahtopoulou 2000; Halstead 2000: 119). Such anthropogenic episodes may have occurred in southwestern Epirus, but there are no geomorphological or archaeological data at present that directly or conclusively implicate human activity in the sedimentation and filling in of Glykys Limin before modern times (Besonen, Rapp, and Jing 2003: 227; but see the entry for Vouvopotamos in chapter 4 for a possible case of human-induced erosion in the Bronze Age). The magnitude of more recent damage to the landscape by devastation, deforestation, and erosion is obvious and can be appreciated in the contrast of the landscape in its present condition with landscapes of the past as they are known to us from literary sources and archeobotanical data.

Vegetation Cover and Climate in the Bronze Age

Climate and vegetation in historical times

Epirus lies in a transitional zone between Mediterranean and central European climatic regimes. The Epirote littoral, including the lower Acheron plain, enjoys a Mediterranean climate under the influence of mild sea breezes. The combination of mild temperatures and ample rainfall makes southern Epirus favorable to the growth of trees and other vegetation of both Mediterranean and European type, as well as a wide range of crops of commercial and subsistence value. The data presented in Tables 7.2 and 7.3 are indices of the favorable climate. In Table 7.2, mean monthly rainfall at two locations in the lower Acheron valley region—Kanallakion on the plain and Ano Skaphidoti, situated at over 800 masl in the hills east of the plain—is compared with corresponding data for the inland basin of Ioannina, and for Messenia in southern Greece. It is noteworthy that the lower Acheron valley receives roughly twice as much rain on average than Messenia, a region renowned for agricultural production. In the summer months of June–September, Kanallakion averages 116 mm of rain, Messenia only 49 mm. Table 7.3 shows that air temperature in southwestern Epirus remains relatively mild throughout the year, in contrast to the greater extremes in temperature that characterize the plains of Thessaly and Macedonia, or the intense heat and desiccation of summer in southern Greece.

The vegetation occupying the hills and mountains of southwestern Epirus today consists mainly of sparse to dense maquis scrub, often degenerated to prickly garigue, representing secondary growth on denuded limestone slopes where once soils were anchored by thick forests of coniferous and deciduous trees. Elevations on all sides of the plain have become barren limestone wastelands; this is especially true of the range of mountains between the Acheron and the Arachthos (Hammond 1967: 35). The main constituents of the slope vegetation at present are Kermes oak (*Quercus coccifera*), acanthus, asphaka

(*Phlomis fruticosa*), various grasses and low bushes, and groves of olive trees. The plain is much more fertile, and crops, mostly recently imported species of commercial value, including cotton, maize, beets, and other vegetables, as well as various fruits and nuts, including olives, watermelons, and citrus fruits, are grown.

Historical data inform us that the worst of the depredations have taken place in the last two centuries, as clearance of the slopes by cutting, burning, and grazing has proceeded at an unprecedented rate, with catastrophic results for the natural vegetation. Leake's visit to the lower Acheron plain in 1809 provides a glimpse of the vegetation at a moment when much of the forest cover was intact, but systematic clearance of the slopes had apparently begun. Descending into the valley near Kanallakion, Leake passes through an oak wood, and later through "a beautiful forest of oak and ilex, where an abundance of nightingales are singing" (1835 [IV]: 50). Even in this idyllic setting, he notes that "[i]n some places the ground has been cleared for sowing corn. The trees, instead of having been felled, have been merely killed by means of an incision round the lower part of the stem; the bark, which is serviceable, is then removed, and the tree burnt by a fire lighted at the root; the labour is thus saved of cutting down the trees, the timber being not worth the expence of removal" (1835 [IV]: 50). It is precisely this sort of careless attitude, born of ignorance or malice, that must explain the disappearance of forests and soils in the past and in the present day. Part of the responsibility for this activity in the early 19th century may be assigned to the exploitive çiftlik system, in which a laborer was provided with nothing but lodging and a small share of the harvest (Leake 1835 [IV]: 54); slopes may have been cleared on orders of the Vezir, or for small fields to supplement a family's meager subsistence. Historical documents attest that degeneration of the forests was notably progressive during the Ottoman period (Hammond 1967: 19; Dakaris 1972a: 9). By the middle of the 20th century, Epirus was the poorest area of the Greek mainland in wood cover; Hammond (1967: 19) cites information that 52% of remaining woodland at that time was scrub wood. The loss of woodland has only accelerated since that time; particularly devastating has been the invasion, in the last generation, of the bulldozer to clear away vegetation for modern development in ever more isolated locations (see, e.g., the entry in Chapter 4 for Valanidorrachi).

Epirus was in ancient times famous for its forests and tree species. The celebrated oak forest at Dodona was important for its connections to the oracular ritual, and for furnishing acorns for animal fodder. The lower Acheron was also associated with specific trees: the tall poplars and drooping willows of the groves of Persephone guided Odysseus to the Kingdom of the Dead (*Odyssey* 10.481–482). Thirty years ago, the banks of the Acheron were still lined by poplars and willows (Dakaris 1975c: 6; note the unnumbered photographic plates at the back of the book); a remnant of the once plentiful stands survives along the banks today. Pausanias (5.14.2–3) relates a story to explain the Eleans' preference for burning the wood of white poplar

THE LOWER ACHERON DRAINAGE

Table 7.2 Mean monthly rainfall at locations in Epirus and in Messenia.*

<i>Location</i>	<i>Rainfall in mm</i>					
	Jan.	Feb.	Mar.	Apr.	May	Jun.
Kanallakion	166.4	152.6	110.8	68.2	50.9	24.2
Ano Skaphidoti	220.4	188.7	147.6	100.0	74.7	35.2
Ioannina	126.9	112.7	162.8	94.3	77.3	64.7
MESSENIA	103	79	51	33	40	9
	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Kanallakion	10.7	14.0	67.1	147.0	192.5	200.8
Ano Skaphidoti	19.4	22.7	80.9	162.1	244.3	248.1
Ioannina	21.7	21.0	46.4	152.0	159.6	181.8
MESSENIA	19	5	16	85	90	130
	Total	Years of Measurement				
Kanallakion	1205.2	1951–1990				
Ano Skaphidoti	1544.1	1952–1990				
Ioannina	1221.2	1915–1940				
MESSENIA	660.0	ca. 1970				

* Sources: for Epirus, Soulis 1994: fig. 39; for Messenia, Aschenbrenner 1972: fig. 4.2.

Table 7.3 Mean monthly temperature at selected locations in Epirus.*

<i>Location</i>	<i>masl</i>	<i>Temperature in °C</i>					
		Jan.	Feb.	Mar.	Apr.	May	Jun.
Preveza 1971–90	3	9.4	10.3	12.3	15.0	18.9	22.8
Ioannina 1951–90	483	5.0	6.4	8.9	12.7	17.4	21.9
Louros 1955–86	100	9.2	9.7	12.3	15.1	19.4	23.2
		Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Preveza 1971–90	3	25.0	25.2	22.8	18.7	14.9	10.7
Ioannina 1951–90	483	25.0	24.5	20.4	14.9	9.8	6.1
Louros 1955–86	100	26.0	26.4	23.4	19.1	14.6	10.7

* Source: Soulis 1994: fig. 4.

in sacrifices to Zeus at Olympia: Herakles found the white poplar growing on the banks of the Acheron, and used it in his own sacrifices at Olympia. Other native species, including laurel, ivy, and honeysuckle, were featured on the coins of Kassope in the Hellenistic period.

Data on vegetation and climate of the Bronze Age

The best information on the vegetation cover and climate of past eras comes from excavated material and deep cores that yield pollen and floral and microfaunal remains. Little information from excavated material is available because screening and flotation of archaeological deposits have not been part of the investigation of Bronze Age sites in Epirus until recently, and no botanical material has been published. A number of pollen cores, all from central or northern Epirus, have been studied and published, however (Bottema 1974, 1994; Willis 1992a, 1992b, 1992c, 1997). Because plant structures are not often preserved, pollen rain is used to estimate the range and relative ubiquity of plant species in a given location. But pollen results tend to be locally valid, and it is at some peril that interpretations from one location are applied elsewhere. A pollen core taken in the

former Acherousian Lake in 1994 has not yet produced material suitable for analysis.

The cores from central and northern Epirus do impart significant information about general climatic trends in the past, and changes can often be discerned that indicate potentially widespread human interference on the landscape. There is first a general finding that eu-Mediterranean vegetation has prevailed for the entire Postglacial era at elevations of 400 masl and below (Bottema 1974: 152, fig. 18). In frost-free regions from sea level to 400 masl, the natural vegetation is eu-Mediterranean evergreen forest, including the species *Quercus ilex* (holm oak), *Quercus coccifera* (Kermes oak), *Arbutus unedo* and *Arbutus andrachne* (strawberry tree), *Pistacia lentiscus* (lentisk or mastic), *Phillyrea media*, *Olea europaea* (olive), *Erica arborea* (tree heather), *Spartium junceum* (Spanish broom), *Cistus*, and *Phlomis fruticosa* (Bottema 1974: 13). As we have seen, species of poplar (*Populus*) and willow (*Salix*) grew along the Acheron in ancient times and persist in small numbers today. At the beginning of the Postglacial era, deciduous oak forest spread over northwestern Greece, forcing the Late Glacial

steppe vegetation to lower elevations (Bottema 1974: 150). At elevations of 400–700 masl, representing the highest slopes to the south and east of the lower Acheron plain, a deciduous forest prevailed, including some elements of the evergreen forest (e.g., Kermes oak), and several deciduous species: *Quercus pubescens* (downy oak), *Quercus cerris* (Turkey oak), *Carpinus orientalis* (oriental hornbeam), *Acer* spp. (maple), *Fraxinus ornus* (manna ash), *Ulmus* (elm), *Pistacia terebinthus* (terebinth), *Paliurus spinachristi* (Christ's thorn), *Amygdalus* (almond), *Pyrus* (pear), *Cornus* (dogwood), *Rosa* (rose), and *Rubus* (various berries) (Bottema 1974: 13–14). Yet the primary natural vegetation of the hills and slopes of the lower Acheron valley in the Bronze Age must have been evergreen forest, as indicated by the modest elevations and moderate Mediterranean climate.

The analysis of three pollen cores recently taken from sites at two locations in the Pindos mountains north of Ioannina provides information about the natural Postglacial vegetation and the possible impact of human activity upon it. The two locations occupy dissimilar environmental niches: at Gramousti in the Doliana basin, a core was taken from a relic lake basin at ca. 400 masl, surrounded by alluvial sands and gravels (Willis 1992a, 1992c, 1997),¹ and from nearby Tseravinas a second core comes from 450 masl (Turner and Sánchez-Goñi 1997). The second location is the Rezina marsh, approximately 15 km east of Gramousti at 1800 masl (Willis 1992b, 1992c, 1997). Unlike other pollen cores from Greece, these cores are particularly sensitive to local vegetational changes because of their very limited catchments, and in fact small-scale changes were detected that are probably masked in comparable regional-scale cores. In each of the three cores, a striking change in vegetation takes place roughly between 6500 and 6000 BP (ca. 5500–5000 cal B.C.), involving a sharp decrease in all tree taxa, accompanied by an expansion of herbaceous species, and increased sedimentation that indicates influx of sediment by erosion from surrounding slopes. There is no evidence, however, for cereals or other cultivated crops, or for the weeds and other species that typically accompany them. Katherine Willis (1997: 409–410) infers that this combination of changes points to anthropogenic intervention in the form of clearance for animal husbandry rather than agriculture. Although archaeological evidence exists for agricultural communities in northern Greece more than a millennium before this, the Pindos cores comprise the earliest paleoecological traces of human intervention on the Greek landscape, which can be explained by the inability of regional-scale cores to detect subtle, localized changes. By around 5000 BP (ca. 3750 cal B.C.), human disturbance is widespread enough to be revealed clearly in pollen cores throughout the Balkans.

The meaning of these changes, and the nature of the human activity they imply, are not unambiguous. Willis reads the evidence to show that the clearance of woodland took place simultaneously at lowland Gramousti and upland Rezina, “and thus by implication involved the practice of seasonal

transhumance to upland summer pastures” (Willis 1997: 410). Douzougli and Zachos (2002: 143) accept this scenario as evidence of transhumant pastoralists focused mainly on stock breeding, but there are problems with this interpretation. The chronology is loose at best: there are inconsistencies in the radiocarbon dates at Gramousti (Willis 1997: tab. 20.2; Halstead 2000: 120), and the calibrated radiocarbon dates of the Doliana settlement (3700–2900 cal B.C. using 2-sigma ranges), situated 500 m east of the drained Gramousti marsh, do not match those of the disturbance seen in the pollen data (between one and two millennia earlier). Instead, Willis (1997: 410) must advance a more uncertain interpretation that a subsequent increase in precipitation and a great influx in tree pollen at Gramousti between 5000 and 4000 BP (ca. 3750–2500 cal B.C.), indicates the spread of shrubs like *Quercus coccifera* and *Quercus ilex* that are resistant to browsing, which persisted from earlier times. There is as yet no archaeological evidence for an earlier settlement at Doliana, nor is there archaeological evidence linking the Gramousti and Rezina areas. Further, as they are only 15 km apart, any pattern of transhumance between them involved localized rather than long-distance movement of herds.

The conclusions engendered by the pollen data from central and northern Epirus apply only in general terms to the lower Acheron region, where the topography and mild coastal climate were more hospitable to agricultural pursuits. The prevailing temperature, rainfall, and topography positively affected the growing season and the range of domesticates that could be grown throughout the year. The gentle slopes and low hills surrounding the plain may have been ideal for agricultural fields when the plain was inundated, and the nearby upland plateaus suitable for seasonal grazing of livestock. The local ecology favored a mixed farming regime of intensive agriculture and livestock rearing, making use of the entire plain and the hills around it, much as Leake encountered in his visit in 1809. Because the local environment is distinct from the locations in Epirus from which cores have been taken in the past, it is best to accept only the general trends in Postglacial vegetation indicated by these cores. Perhaps one day a core from the former Lake Acherousia or elsewhere will furnish information about the Bronze Age landscape of the lower Acheron valley, and the role of human beings in modifying it.

Plant and Animal Resources

Very little is known about the plants and animals actually exploited by Bronze Age communities in Epirus, because floral and faunal remains were rarely saved in early excavations, and are mentioned only in passing, if at all, in archaeological reports. It is anticipated that in the future, as later prehistoric sites are published, specialist analyses of plant and animal remains will be incorporated into discussions of subsistence (see Zachos 1997; Douzougli and Zachos 2002).

Animal resources in the Bronze Age

Faunal remains of cattle, pig, and sheep and goat have been mentioned from a variety of late prehistoric sites in Epirus; e.g., the Nekyomanteion (pig, wild boar, and cattle; Dakaris 1963b), Ephyra (sheep/goat, wild boar, cattle, and deer; Papadopoulos 1982, 1986b), Krya (sheep/goat, cattle, and as yet unidentified bird species; Zachos 1997), and Doliana (sheep/goat, cattle, pig, and a range of other species; Douzougli and Zachos 1994: 17). At Ephyra, almost every excavated context produced animal bones, sometimes in large numbers. They were surely abundant at many sites, and when relative proportions of species are known, sheep, goat, cattle, and pig are the most ubiquitous. The few animal bones recovered in association with Bronze Age sites by the Nikopolis Project archaeological survey appear to belong primarily to sheep or goat (i.e., Latomeion, Skepaston; see Chapter 4).

The faunal assemblage at Final Neolithic–EBA Doliana, notable for its great quantity and diversity, has been analyzed and preliminary information has been published (Halstead 2000: 120–121; Douzougli and Zachos 1994: 17, 2002: 138, 143). Paul Halstead and colleagues find no support in the faunal remains for the notion of a seasonally occupied community engaged in long-distance pastoral rounds, on the model of modern Sarakatsani, or even a community specialized in stock breeding to the exclusion of agriculture. Domesticated species account for 90% of the individuals present, and of these, sheep, pig, and cow are well represented (Douzougli and Zachos 2002: 138). The mortality profile reveals that very young animals were being slaughtered, suggesting human presence at least in late winter to early spring, when long-distance transhumant groups might be expected to be in the lowland coastal plains (Halstead 2000: 120). The same pattern casts doubt on the intensive use of animals for dairying, which in turn weakens the case for primary dependence on livestock for subsistence. Instead, livestock were used mainly for meat or perhaps for a mixture of products (Douzougli and Zachos 2002: 143). A very similar assemblage of domesticated sheep/goat, cattle, and pig, with a comparable mortality pattern, at LBA Sovjan in southeastern Albania led investigators there to also propose a meat-based strategy (Gardeisen et al. 2002).

The predominance of remains of cattle, sheep/goat, and pig at Bronze Age sites suggests that these animals were domesticated and that herding formed a substantial part of the subsistence economy. The secondary products—milk, cheese, wool, and skins—may have been as important, if not more so, than the meat. The prevalence of these domesticates is repeated in faunal assemblages at Bronze Age sites throughout Greece (Payne 1985). Moreover, an emphasis on these domesticated species is confirmed, for Late Bronze Age economies at least, in the Linear B archives found primarily in the palace complexes at Knossos, Pylos, Mycenae, and Thebes. In each case, sheep, goats, and cattle were the main domesticates, with pigs playing a smaller role (horses, oxen, and dogs are

domesticated species of apparently lesser importance). The prominence of sheep in particular is demonstrated in the Knossos archives: roughly one-third of all the Knossos tablets are concerned with sheep and wool (Chadwick 1987: 37); Killen (1984: 49) deduces from the D-series records immense herds of 80,000–100,000 sheep. At Pylos, the sheer numbers appear lower, in part because the records are less complete, and also perhaps on account of specialization there in producing linen from flax (Killen 1984: 51–53). Domesticated pigs form a smaller but still substantial proportion of animals in the Linear B archives, as also in archaeological assemblages in Epirus. Oxen are mentioned primarily as draught animals in the Knossos records; leather and deerskin are listed rarely in the Pylos archives, as are dogs, perhaps used as hunting animals (Chadwick 1959: 119). The presence of bones of wild species such as boars and deer at Epirote sites shows that they were hunted, perhaps as dietary supplements.

The faunal data in Epirus, meager though they are, conform to archaeological and textual information from the rest of Greece. In subsequent eras, ancient writers proclaimed the richness of the Epirote herds. Hesiod (Fr. 349) recognized the wealth of sheep, goats, and cattle in Epirus; Pindar (*Nemean* 4.52–54) praised the vastness of the cattle pastures that “start from Dodona to slope to the Ionian Strait.” Aristotle (*Historia Animalium* 3.2.1) noted the great size of the cattle and the high yield of their milk, which he attributed to the fine pasture available throughout the year.

A host of wild animals was believed to inhabit the Pindos range, including lions, leopards, panthers, and bears (Pliny, *Historia Naturalis* 8.48). A description of professional hunting in the 19th century in the Ioannina basin is preserved by Epirote chronicler Dimitrios Salamagas (1965: 114–116). Among the plentiful game still available in and around the basin at that time were wild boar (common), wolves (relatively common), bears (which occasionally came down from the higher elevations), weasels, foxes, and innumerable species of birds. Coastal zones like the lower Acheron valley were probably home to smaller wild species, such as wild boar, wolves, foxes, deer, and jackals.

Fish and shellfish provided an alternative source of food that must have been particularly important as a dietary supplement in the Acheron plain, defined as it was by rivers, lakes, wetlands, and the sea. Fish bones and shells do occur at prehistoric sites in Epirus (e.g., at Ephyra: Papadopoulos 1981a), but no information exists about species or ubiquity. At the Skaphidaki site on the Ayios Thomas peninsula overlooking the Ambrakian Gulf (see entry in chapter 4), lenses of marine shells (chiefly *Cerastoderma edule*) that can justifiably be considered midden deposits were discovered in late prehistoric levels. The wealth of riverine and marine resources in the lower Acheron plain is implied by Leake, who observed that even the seasonal lakes provided an abundant and constant supply of fish (1835 [IV]: 52).

Plant resources in the Bronze Age

While many useful plant products can be inferred from the vegetation that covered the plain and surrounding hills, questions about the extent to which agriculture was practiced in the Bronze Age and the crops that were cultivated are not so easily approached. The natural tree cover furnished wood for kindling, fodder, and construction material. Reeds, grasses, and leafy bushes and trees supplied browsing for cattle, sheep, and goats. Pigs could be fed acorns in deciduous oak woods at higher elevations. Some bush and tree species carried edible fruits or nuts. On the marshy plain itself, reeds, willows, and rushes provided suitable material for wattle-and-daub construction, and could be fashioned into baskets, nets, and fishing traps, nets, and lines. The heavy marsh clays were perhaps ideal for use as daub, and in the manufacture of mudbricks and ceramics.

Clues to plant species that may have been cultivated in the lower Acheron valley are found in the archaeobotanical data from elsewhere in Greece (Hansen 1988: tab. 1, 1994). The two earliest forms of domesticated wheat, emmer (*Triticum dicoccum*) and einkorn (*Triticum monococcum*), were grown throughout the Bronze Age (bread wheat [*T. aestivum*], a more demanding variety, reappeared in the Late Bronze Age after a hiatus in the Early and Middle Bronze Age). In all phases of the Bronze Age, however, six-row barley (*Hordeum vulgare*) was a more common crop than wheat (Hansen 1988: tab. 1), possibly as a consequence of its hardiness; interestingly, barley seems also to be more plentiful in the Linear B records. The main domesticated legumes preserved in the botanical record are lentils (*Lens culinaris*), peas (*Pisum sativum*), and bitter vetch (*Vicia ervilia*), all of which appear in the Linear B archives. Olives, figs, and grapes are also present in the tablets, and the existence at Pylos of an industry for the production and trade of perfumed oils has been proposed (Shelmerdine 1984; Haskell 1984). Archaeological and pollen evidence suggests that domestication and systematic cultivation of the olive did not in fact take place before the late stages of the Late Bronze Age, and the olives used for the perfumed oil industry were wild olives, preferred for their lower fat content (Runnels and Hansen 1986; Melena 1983). The probable wild progenitor of the domesticated olive, *Olea europaea* var. *oleaster*, was a natural member of the eu-Mediterranean evergreen forest, and a common constituent of maquis vegetation. Wild olive trees likely grew on the hills rising above the lower Acheron plain; the fruit was probably gathered by humans and eaten by animals. It is possible that olive trees were cultivated in the valley during the Bronze Age, although there is no positive evidence. The grape (*Vitis vinifera*) was domesticated already in the Early Bronze Age in Anatolia, where wine presses and vessels containing grape residue have been excavated recently (Wiseman 1996). Widespread use of domesticated grapes for making wine in Greece in the Late Bronze Age may be inferred from the Linear B archives (Palmer 1994, 1996), and domestication is attested at many Bronze Age sites in the Mediterranean and the

Near East (Renfrew 1973: 127; several contributions in McGovern, Fleming, and Katz 1996). Southwestern Epirus is part of the natural range of the *Vitis silvestris* in the present day, and wild grapes must have been growing in forests of the lower Acheron valley in the Bronze Age. There is no direct evidence of cultivation or even exploitation of wild grapes in Epirus in late prehistory, only the likelihood that humans and animals consumed the grape in some form.

Rare carbonized grains of einkorn wheat have been recovered at Doliana (Douzougli and Zachos 2002: 138). An interesting perspective on einkorn as a suitable domesticate in the lower Acheron valley comes from Sovjan, located in an upland basin on the margins of ancient Lake Maliq in southeastern Albania (Allen 2002). Around 4000 BP, the plain surrounding the lake became increasingly marshy. Well-preserved macrobotanical remains (seeds, wood, and other dense plant parts) in MBA–LBA levels indicate that einkorn was the most common domesticated cereal crop for a community with a diversified subsistence economy combining agriculture with hunting, gathering, and fishing. Einkorn is more tolerant of flooding and drought than other forms of wheat, and thus more suitable for the wetland environment that developed at Sovjan in the Bronze Age (Allen 2002: 71). Fava beans (*Vicia faba*), similarly tolerant of a wetland ecology, appeared prominently in the later MBA when marshy conditions prevailed. Fava is thought to provide some protection against malaria (Allen 2002: 71–72). Bronze Age communities in and around the lower Acheron plain may have encountered similar challenges in the extensive seasonal wetland, and for them too domesticates like einkorn and fava may have been economical choices. We will only know when plant remains are found and sampled systematically.

Conclusions

Evidence accumulated from a variety of sources permits us to outline the essential characteristics of the natural environment of the Bronze Age. Some of the findings reflect timeless continuity, while others illustrate profound changes that have chiefly human causes.

The Bronze Age climate was much as it is today—a Mediterranean climate governed by mild sea breezes and substantial rainfall. The karstic limestone geology and several streams flowing into the plain from the north ensured a perennial supply of fresh water, more abundant in the Bronze Age than today as a consequence of lower demand and the absence of systematic water management.

The conditions prevailing in the plain must have been similar to those at the time of Leake's visit in 1809. The rivers were surrounded by wetlands, drier in the summer and wetter in the winter and spring. The Kokytos, Acheron, and Vouvos overflowed their banks annually, forming small, shallow lakes in the low-lying areas (such as the depression that later became Lake Acherousia) that

THE LOWER ACHERON DRAINAGE

persisted into the early summer months. The wetland vegetation provided fodder for grazing animals, and many useful products for human needs. It was also possible to grow crops on the plain once the floodwaters receded. Poplars and willows lined the rivers and grew in groves dotted about the plain.

Local topography was similar, with one major exception: the existence of a wide marine embayment, completely lacking today, that extended well to the east of the constriction formed by the opposite ridges of Mesopotamos and Tsouknida. The wide, protected bay presented unique opportunities to Bronze Age communities to exploit marine fauna, and the suitability of the bay as a harbor held profound implications for local inhabitants as maritime trade along the Ionian route to the Adriatic region grew in frequency and importance.

The natural eu-Mediterranean forest, with its Kermes oak, holm oak, arbutus, olive, and assortment of low bushes, thickly covered the low hills in the plain and lower elevations of the surrounding slopes. Remnants of such vegetation, which give an idea of their pristine appearance, persist on a few of the ridges near the mouth of the Acheron river, e.g., on Laspotopos and Ayia Eleni. Some of this vegetation was of course cleared in the Bronze Age, but widespread clearance, leading to loss of soils and deterioration of the vegetation cover to degraded maquis, was virtually unknown. Grazing probably had the effect of clearing underbrush, creating open woodlands where agriculture and herding could be practiced on a small scale.

A broad range of plant and animal resources was obtainable throughout the year. We may hypothesize from archaeological and botanical data, and by analogy with better-studied regions of Greece, that a suite of domesticated plants and animals was exploited. In particular, sheep, goats, cattle, and pigs were raised for their meat and secondary products on excellent pasture to be found on the plain or in the hills. Wheat, barley, and legumes were planted in the plain and on the lower slopes according to the season.

The fruits of wild plants, including olives, grapes, almonds, and pears, were gathered for food and other uses. Trees furnished wood for fodder, kindling, and construction material. The grasses of the swamp were ideal for construction and for baskets, fishing nets, and other woven products. Hunting had certainly diminished in importance after the domestication of cattle, pigs, and ovicaprids, but deer, wild boar, and other wild animals were still hunted for their skins, and perhaps to supplement the diet. The plain and the seacoast were marvelously stocked with freshwater and marine resources, and fish and shellfish must have been taken in great quantities from the bay, the rivers, and the swamps.

The foregoing reconstruction indicates that the natural environment was favorable for a diversified subsistence

strategy, although population may have been limited by the unsuitability of the plain for settlement. With the benefit of a greater understanding of the ecology of the lower Acheron valley, the accumulated archaeological evidence, set out in earlier chapters, may now be directed toward an inquiry into the most significant Bronze Age conjuncture in southern Epirus—the presence of representatives of the Mycenaean world.

Endnote

1. The elevation of Gramousti Lake was reported incorrectly as 285 masl in Willis 1992a and Douzougli 1996a, and corrected to 400 masl in Willis 1997: 396.

Chapter 8: A Medium-Term Conjecture: Mycenaean Presence in Southwestern Epirus

At present, close to 40 sites with remains of Aegean origin or inspiration are known in Epirus (Figure 8.1, Table 8.1). These remains include a tholos tomb, a few fortified acropoleis, pottery, and bronze weapons and other implements. These objects manifest a range of contacts with the Mycenaean world: direct vs. indirect; active vs. passive; imported vs. imitation; purely Aegean character vs. mixed traditions. Broadly, we may distinguish the coastal regions, where contact may have been direct and active, from the inland areas, where Mycenaean material culture was experienced only indirectly as a result of the transmission of portable objects. More complex are questions of the origins of such objects, and the sources of objects that seem to spring from a mixture of distinct traditions. Further, the social and economic implications of contact with the Mycenaean world are far from clear. The purpose of this chapter is to evaluate the evidence for all forms of Mycenaean presence, in order to arrive at a better understanding of the nature of the interaction between the Epirote and Mycenaean worlds, and the impact that this encounter may have had throughout Epirus. I focus particularly on this interactive process in the coastal region of the lower Acheron valley, which I characterize as a medium-term conjuncture.

Among the 39 sites listed in Table 8.1, the contexts producing Mycenaean or Mycenaean-inspired material are fairly evenly divided between burial and non-burial. Fifteen sites include one or more burials; these are mainly cist graves, but include also a Mycenaean tholos tomb, cists set in tumuli, and a simple pit burial. Standing architecture of Mycenaean type is preserved at four sites. The remaining find contexts are hoards, settlement debris, and artifact scatters that cannot be associated definitively with any functional site category. The inventory of artifacts of Mycenaean type comprises bronze weapons and implements from 28 sites; imported Mycenaean fine pottery from 16; and local imitation Mycenaean ware from six (see Chapter 5 for descriptions).

Settlements

Three settlements possessing significant evidence of access to Mycenaean material have been extensively excavated: the Kiperi tholos tomb and a presumably associated settlement near Parga on the Ionian Sea coast; the Xylokaastro hill near the mouth of the Acheron River, also on the Ionian coast; and the prehistoric settlement underlying the Archaic and later sanctuary at Dodona, some 20 km southwest of Ioannina.

Kiperi

In 1937, a small but well-constructed Mycenaean tholos tomb was discovered at Kiperi, an isolated location 3 km east of Parga, overlooking Lichnos Bay at approximately

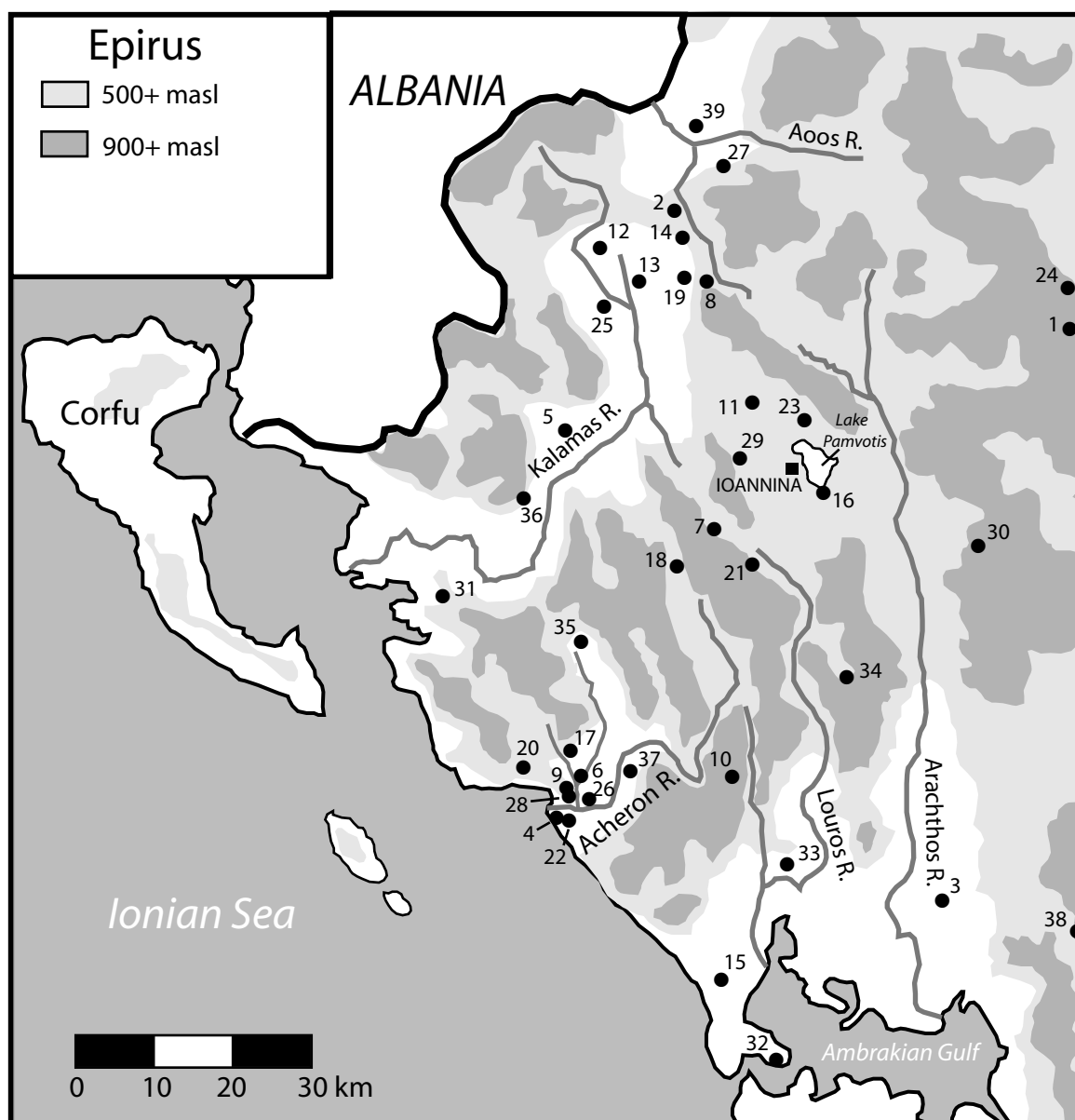
150 masl (Figure 4.19). Although the tomb had been robbed in antiquity, an excavation in 1960 yielded sherds from imported Mycenaean kylikes, alabastra, cups, and stirrup jars, alongside sherds of local handmade ware (Figure 5.10; Dakaris 1960a, b, c).

The architectural features of the tholos—including the modest size, the regular coursing of small, rectangular blocks, the lack of a stomion, the floor of pebbles in both chamber and dromos, and the absence of burial pits—are most closely paralleled by the Ayios Ilias tholoi in Aitolia (Hope Simpson 1981: 177; Papadopoulos 1981b: 22–23). Other connections to Aitolia are apparent in the ceramic assemblage. The reddish tone of the fabric of most of the imported Mycenaean sherds argues for production in a provincial center, and in fact three sherds of a sandy red fabric find exact parallels in a few sherds and vessels from the tholoi at Ayios Ilias (Wardle 1972: 198; Papadopoulos 1981b: 12). The dating of the imported pottery, based on analysis by Papadopoulos (1981b), seems to fall between LH IIIA1 and LH IIIA2B. A construction date in LH IIIA1 would accord well with the prominence of Ayios Ilias as a Mycenaean center in LH IIB–LH IIIA1 (Wardle 1977: 162). A spear point said by local residents to have come from the tholos has a later chronology of LH IIIB–C. This piece is problematic in view of its dubious provenience and the fact that nothing else from the tomb suggests the later date. For now, the use of the tomb is indicated from roughly the mid-15th century to the end of the 14th century, some 150 years. Some wall remains and foundations east of the tholos are probably constructions of Mycenaean type (Dakaris 1960b: 125), but no conclusive evidence of their date has been forthcoming. If they are, the spear point may come from another tomb or hoard associated with a settlement that continued into late Mycenaean times. Intensive survey in the thick vegetation surrounding the tholos failed to turn up any Mycenaean material (see site entry, Chapter 4), a result that, given the conditions of survey, sheds little light on Bronze Age activity there.

Xylokaastro (Ephyra)

Near the mouth of the Acheron River, a hill known locally as Xylokaastro rises to over 80 masl, sloping quite steeply on the north and east, and more gently on the south and west (Figure 4.4). Remains of three enclosure walls that once surrounded the acropolis can be seen today. At least two of these walls, the middle and lower, were constructed in the Late Helladic period, using masonry techniques that can be considered “cyclopean.” While not on the same monumental scale, several attributes of the wall construction are comparable to those found at Mycenaean centers like Mycenae, Tiryns, and Gla. The chief points of similarity are the use of large, irregular, quarry-face or hammer-dressed blocks with smaller stones placed into the interstices, and the design of the monumental southern

MYCENAEAN PRESENCE IN SOUTHWESTERN EPIRUS



- | | | |
|---------------------|-------------------|-------------------|
| 1. Anthochori | 14. Kalyvia | 27. Mesoyephyra |
| 2. Aristi | 15. Kassope | 28. Nekomanteion |
| 3. Arta | 16. Kastritsa | 29. Neochoropoulo |
| 4. AYIA ELENi | 17. KASTRIZA | 30. Pramanta |
| 5. Despotiko-Gouves | 18. Katamachi | 31. Riziani |
| 6. Dikorpho | 19. Kato Pedina | 32. SKAPHIDAKI |
| 7. Dodona | 20. Kiperi | 33. Stephani |
| 8. Elaphotopos | 21. Kopani | 34. Terovo |
| 9. Ephyra | 22. KOUMASAKI | 35. Tsardakia |
| 10. GALATAS | 23. Kyra | 36. Vereniki |
| 11. Gardiki | 24. Lachanokastro | 37. VOUVOPOTAMOS |
| 12. Kakousioi | 25. Mazaraki | 38. Yianniotio |
| 13. Kalpaki | 26. Mesopotamos | 39. Liatovouni |

Nikopolis Project discoveries in all capitals

Figure 8.1 Map of Epirus showing the locations of site with material of Mycenaean type. Topography adapted from Andreou, Fotiadis, and Kotsakis 1996.

MYCENAEAN PRESENCE IN SOUTHWESTERN EPIRUS

Table 8.1 Roster of Epirote sites with elements of Mycenaean type or inspiration.*

<i>Site name</i>	<i>Material</i>				<i>Provenience**</i>					
	<i>Myc. pottery</i>	<i>Myc. imitation pottery</i>	<i>Bronze objects</i>	<i>Arch- itecture</i>	<i>Cist grave</i>	<i>Pit grave</i>	<i>Tumulus burial</i>	<i>Tholos tomb</i>	<i>Settlement debris</i>	<i>Hoard</i>
Anthochori			•		•					
Aristi	•				•					
Arta (museum)			•							
AYIA ELENI				•						
Despotiko-Gouves			•							
Dikorpho	•								•	
Dodona	•	•	•						•	
Elaphotopos			•		•					
Ephyra (Xylokastro)	•	•	•	•	•		•		•	
GALATAS	•								•	
Gardiki			•							
Kakousioi			•							
Kalpaki			•		•					
Kalyvia			•							
Kassope	•								•	
Kastritsa	•	•	•		•				•	
KASTRIZA	•			•					•	
Katamachi			•							•
Kato Pedina			•		•					
Kiperi	•			•				•		
Kopani		•								
KOUMASAKI	•								•	
Krya	•		•						•	
Lachanokastro			•							
Liatovouni	•		•		•					
Mazaraki	•	•	•		•					
Mesopotamos			•							
Mesoyephyra			•							
Nekyomanteion	•		•		•				•	
Neochoropoulos		•			•					
Pramanta			•							
Riziani			•						•	
SKAPHIDAKI	•		•		•				•	
Stephani			•						•	•
Terovo			•							
Tsardakia			•			•				
Vereniki			•							
VOUVOPOTAMOS	•								•	
Yianniotio			•		•					
<i>Totals 39 sites</i>	16	6	28	4	13	1	1	1	14	2

* Sites discovered by Nikopolis Project are set in capital letters.

** If known; provenience include only contexts in which Mycenaean material was found.

entrance gate of the lower peribolos. The south gate is flanked by projections, and the eastern projection is offset, i.e., brought forward, in a fashion similar to the monumental South Gate at Gla in Boeotia (Figure 4.5; Iakovidis 1989: 59–61, plan 5, pl. 26). The enclosure walls are dated on the basis of their masonry style, as well as by the placement of two burial vessels, thought to date to the Early Iron Age, against the middle enclosure wall (Dakaris 1958a: 111–112). The ancient settlement is known in the archaeological literature as *Ephyra*, after the name attested in Homer (*Odyssey* 1.259, 2.328) and Thucydides (1.46).

As described in Chapter 7, the site, which currently lies some four kilometers inland from the Ionian Sea, was in the Bronze Age situated near the shore of a wide, natural bay at the mouth of the Acheron River. In the Late Bronze Age, the harbor known later to Strabo (7.7.5) as *Glykys Limin* (“sweet[water] harbor”) was wide and well-protected, ideally suited to maritime communication and economic activity. The foundation here of an important settlement of the Mycenaean period makes a great deal of navigational sense as well, in light of the fact that the bay represented one of few good landfalls on the rugged Epirote coast.

Test excavations carried out by Dakaris in 1958 were followed by 12 seasons of excavation directed by Papadopoulos from 1975 to 1987. Two areas were extensively excavated: a series of burial tumuli and cist graves on the west slope of the hill just inside the middle enclosure wall, and the area just inside and outside the south gate of the lower cyclopean wall. Three large tumuli (A, B, G) were found on a terrace supported by the middle wall, which was shown to be earlier than the burials by the observations that two burial vessels were placed against the wall, and that stones were removed from the wall to accommodate one of the tumuli (Dakaris 1976b). The finds from the tumuli and other excavation units help to date the construction of the walls and the occupational history of the late prehistoric settlement. Artifacts recovered include local handmade pottery, imported and imitation Mycenaean painted pottery, and weapons, implements, and jewelry of bronze. The corpus of imported Mycenaean pottery includes sherds from kylikes, alabastra, stirrup jars, and cups. The dates of the imports range from LH IIIA to LH IIIC, with an apparent peak of frequency in LH IIIA2 and LH IIIB. A small-scale industry imitating Mycenaean vessels at Ephyra in LH IIIB and LH IIIC has been hypothesized (Soueref 1986: 87–88, 1989a: 170–171), but detailed evidence has not been presented. In all contexts, local handmade ware of Bronze Age type makes up the vast majority of the ceramic assemblage, as is the case everywhere in Epirus.

Life at the walled settlement apparently continued in LH IIIC after the collapse of Mycenaean palatial society, almost surely under the influence of peripheral areas such as the Ionian Islands, which forged new syntheses of material culture while preserving strong Mycenaean influences. The placement of burials against and on top of the middle

enclosure wall may signal the abandonment of the walled settlement at the very end of the Bronze Age or in the Early Iron Age. Ultimately, the disruption of maritime trade along the Adriatic route may have made Ephyra irrelevant as a harbor town. The results of intensive survey in the lower Acheron region suggest that settlement persisted into the EIA at a much-reduced level at Ephyra and a few of the other large LBA sites, but lower-tier settlements and activity areas were abandoned (see Chapter 9).

Dodona

A very different pattern of contact with Mycenaean civilization must be imagined for Dodona, well inland and difficult of access from the Ionian coast. Beneath much of the level area of the later sanctuary of Zeus, a prehistoric stratum averaging around 0.50 meter in thickness is preserved, although it is disturbed in most places (Evangelides 1935, 1952; Dakaris 1967a, 1968a, 1969, 1971b; Soueref 1986: 39–53). Dakaris uncovered evidence of a prehistoric settlement beneath the stoa of the Hellenistic Bouleuterion in the late 1960s, consisting of traces of putative wooden huts in the form of postholes, hearths, and associated bothroi (Figure 3.1). The associated artifacts included local handmade pottery, matt-painted pottery, imported and imitation Mycenaean pottery, and bronze weapons and implements of Mycenaean type.

The bronze artifacts found at Dodona include straight-backed knives, T-handled knives and daggers, leaf-shaped spear points, cruciform axes and double axes, and horned swords, which range in date from late LH II/early LH III to LH IIIBC. A horned sword (Figure 8.2: 82; Kilian-Dirlmeier 1993: 47, pl. 16.82) belongs to Sandars’ C/G/H group, Type 1b, variant 1b2, and is likely of LH IIIA date. Two T-handled daggers of Sandars Type F, variant F2C (Figure 8.3: 208, 209; Kilian-Dirlmeier 1993: 85, pl. 33.208, 209) are known from Dodona: one in the British Museum (1975.7–12.67), and the other now lost, are dated more generally to LH III.

The Mycenaean pottery, amounting to around 180 sherds, was studied by Wardle (1972: 194–216), who came to the following conclusions. The shapes are normal for a settlement, comprising kylikes (the most common shape), deep bowls, stemmed bowls, kraters, piriform jars, stirrup jars, and a few other shapes. The chronology, inasmuch as it could be determined, ranges from LH IIIA2 to LH IIIC. A very small amount of imitation Mycenaean ware of local red, gritty fabric includes the clumsily formed and decorated kylix (MI 3692; Figure 5.9) currently on display in the Ioannina museum. Wardle estimated that Mycenaean sherds make up only 5% of the corpus of ceramic material excavated by Dakaris, which is dominated by local handmade ware of a type found throughout Epirus.

Isolated Burials

Many of the best preserved Mycenaean artifacts found thus far in Epirus come from cist graves that lack any association

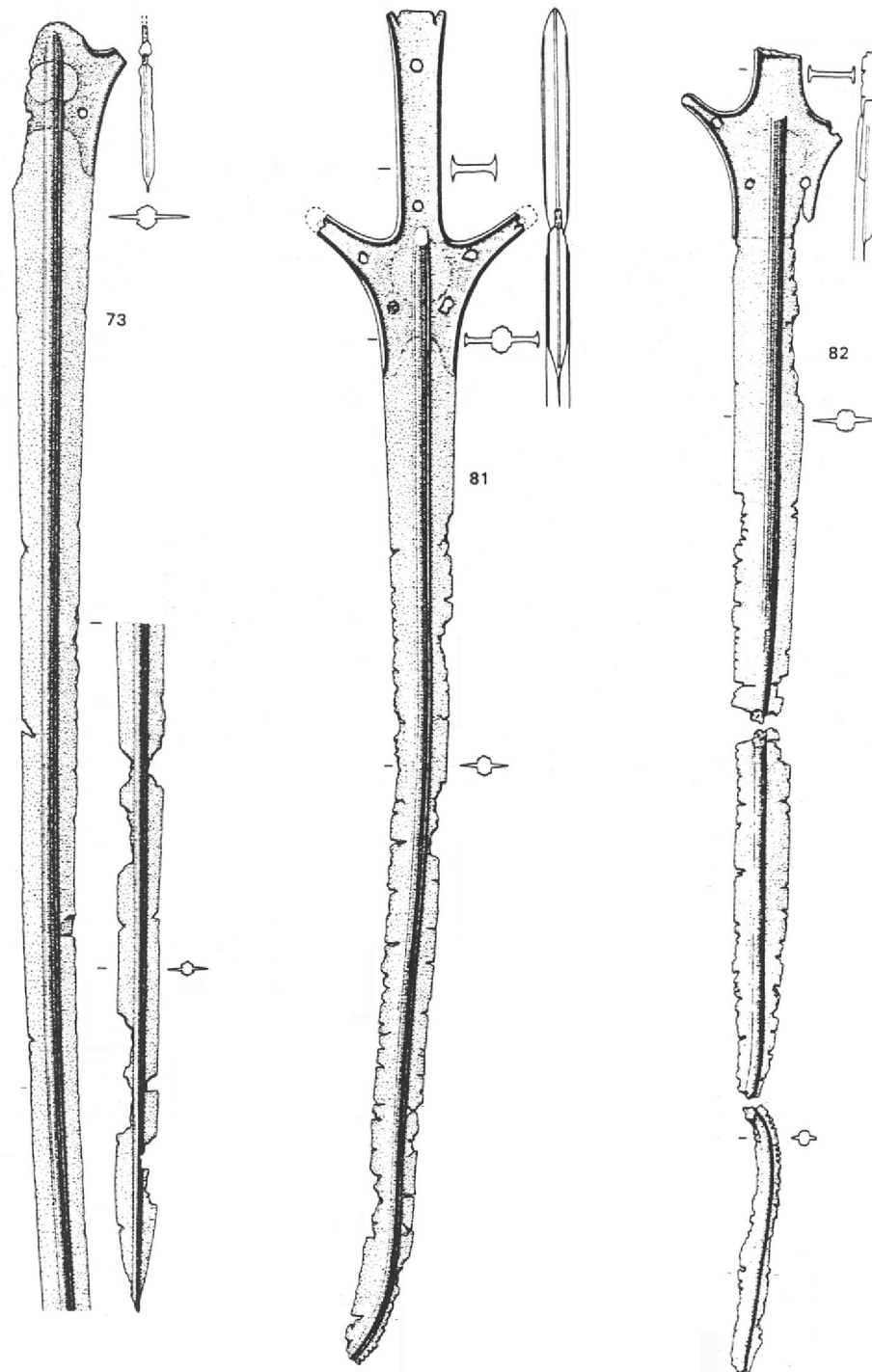


Figure 8.2 Swords of Aegean type from Epirus: 73 and 81, Mesogephyra; 82, Dodona. After Kilian-Dirlmeier 1993.

with identified settlements (Papadopoulos 1976: 277–279). Approximately 20 in number, these Bronze Age cists are scattered about Epirus at a wide range of elevations and in diverse environmental settings. Some see the locations and apparent isolation of several of the graves as proof that these are the burials of transhumant herders, but this remains an argument based on negative evidence (see Chapters 7 and 9). Most were discovered by chance in the course of construction activities, and nearly all had been plundered or disturbed in antiquity. The graves exist singly

or in small groups of up to four. Single cists contain from one to three skeletons; in the case of multiple burials, there is clear evidence for repeated use over a period of time. Small cist grave cemeteries (i.e., more than one grave) at a few sites in central and northern Epirus have yielded particularly rich burial offerings, but it must not be imagined, given the limited sample, that their locations represent a preferential pattern of affluence, or impart much information on Bronze Age demography. Four of these cemeteries are notable for the variety and quantity of exotic

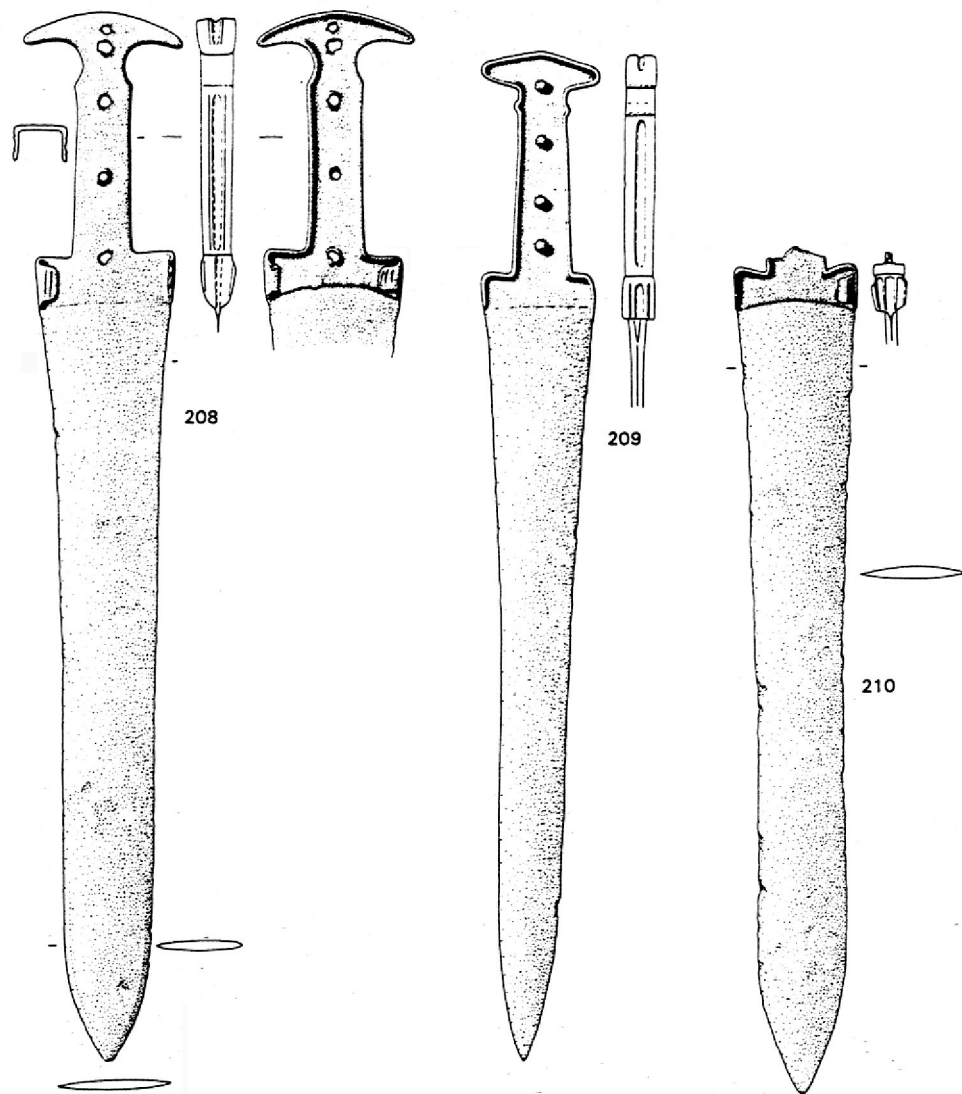


Figure 8.3 Daggers of Aegean type from Epirus: 208 and 209, Dodona; 210 Kalpaki. After Kilian-Dirlmeier 1993.

grave goods deposited with the dead, and for relatively detailed publication: those at Elaphotopos, Kalpaki, Mazaraki, and Kastritsa.

Elaphotopos

The site of the Elaphotopos cemetery lies on the eastern side of the upland Pedina plateau, west of the sources of the Aoos River, at 850 masl. The location overlooks relatively easy routes of movement north to Albania, west to the sea, and south to Thesprotia and the Ioannina area. Four cist graves were found already plundered, and in 1966 a salvage excavation was carried out, supplemented by test excavations in the vicinity of the graves (Vokotopoulou 1967: 315, 1969b: 179–191; Soueref 1986: 23–25).

All of the ceramic finds derive from handmade, local wares of K II and K III type (although it is not possible to know what may have been removed from the plundered cist graves of Epirus). Nine vessels were found whole, and eight

of these are kyathoi (cups) with single, high handles. On the basis of their shape and smoothed, blackened surface, the kyathoi were classified as K III vessels and compared with Minyan ware (Vokotopoulou 1969b: 181–184, pls. 24, 25). Numerous bronze pieces include 10 rings, eight small spiral disks, two bracelets terminating in spiral disks, 50 small bronze beads, and a curved knife (Vokotopoulou 1969b: 184–188, fig. 2, pl. 24). Nine amber beads and 31 of chalcedony were among the other small finds. The assemblage has a decidedly northern appearance, and several objects, including the curved knife, the amber beads, and the spiral bracelets and disks, were probably imported from that direction (Papadopoulos 1976: 285–292).

A date of LH IIIB–LH IIIC for the use of the Elaphotopos cist graves has been suggested on the basis of artifact comparanda from Kalpaki in Epirus and other sites in Greece (Vokotopoulou 1969b: 189), but the date could be as late as 1000 B.C. (Hope Simpson 1981: 178).

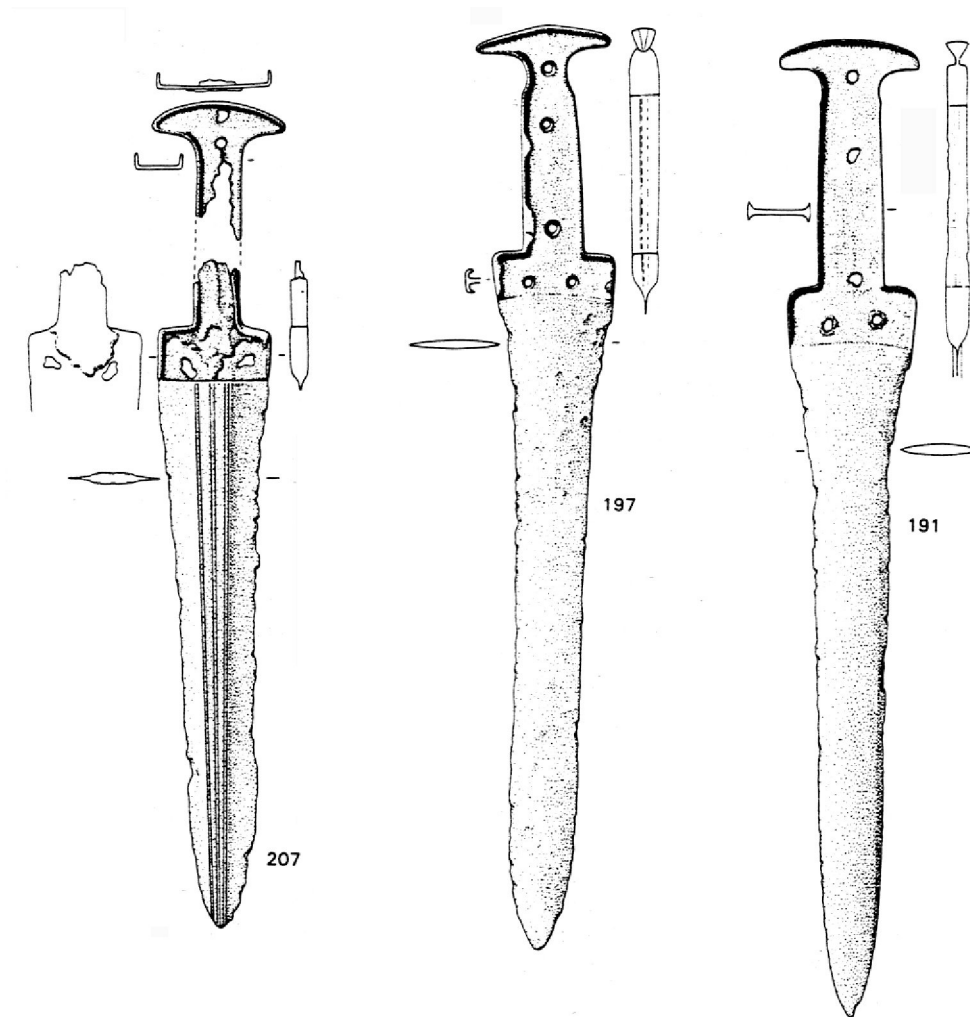


Figure 8.4 Daggers of Aegean type from Epirus: 207, Kalpaki; 197 Mesopotamos; 191 Kastritsa. After Kilian-Dirlmeier 1993.

Kalpaki

In a narrow valley connecting the Ioannina plain with the region of the sources of the Thyamis (Kalamas) River northwest of Ioannina, just west of the Ioannina–Konitsa road, four cist graves were discovered on the grounds of an army base (Dakaris 1956; Soueref 1986: 25–28). Excavations in 1953 revealed that only 0.10–0.20 m of earth overlay the cists, which were lined with large, rectangular limestone slabs, and in two cases, also covered by a large slab of limestone.

In many respects, the assemblage of grave goods is similar to that of Elaphotopos. Sherds, some with plastic decoration, and a few whole vessels are limited, as at Elaphotopos, to local handmade types. Other artifacts mirror the northern influence noted at Elaphotopos: a curved knife (Soueref 1986: fig. 51.I.b), two bronze bracelets with antithetical spiral terminals (and two spiral disks from another bracelet), an amber bead, and beads of

chalcedony and rock crystal. On the other hand, cist grave 1 contained two items showing Aegean influence: a type F short sword (Wardle 1977: fig. 13a), and a leaf-shaped spear point (Hammond 1967: fig. 23G). The type F sword with a short blade and a flanged, T-shaped hilt (Figure 8.4: 207) is one of a group of late Mycenaean swords that Vokotopoulou (1969b: 194) dates to LH IIIB, but for which Wardle (1977: 193) prefers a date not earlier than late LH IIIB–early LH IIIC. The example from Kalpaki is flanged on only one side of the hilt, a variation that may indicate local manufacture or importation from a provincial Mycenaean center (Wardle 1977: 191, 1993: 128–136). A second type F sword without precise contextual information from the Kalpaki area (Figure 8.3: 210) shows even greater divergence from the canonical form (Wardle 1977: 191, fig. 13b). A recent assessment places both swords in Sandars Type F, variant F2C, with a chronological range of LH IIIA2–Submycenaean times (Figures 8.2, 8.3; Kilian-Dirlmeier 1993: 85, pl. 33.207, 210).

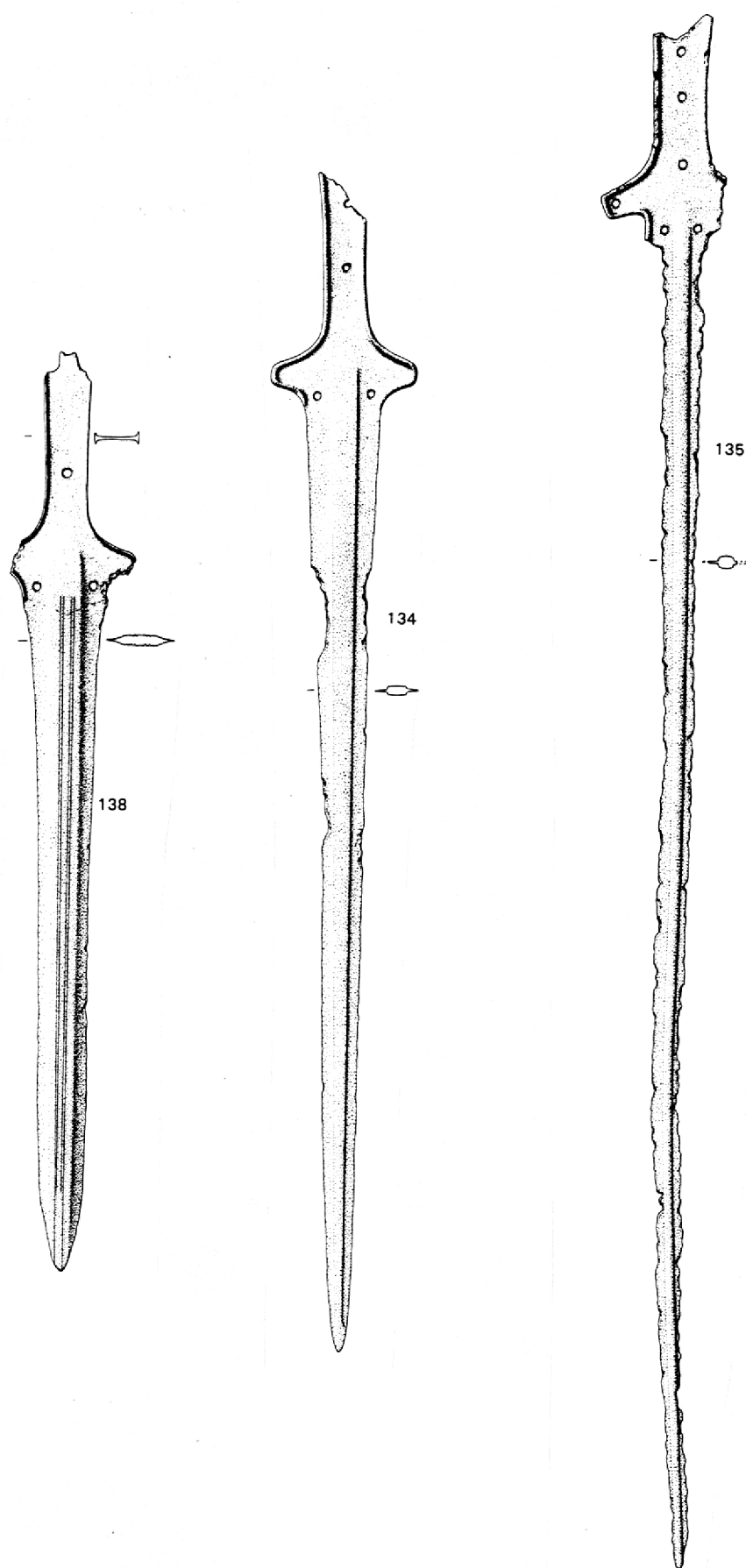


Figure 8.5 Swords of Aegean type from Epirus and Albania: 138, Mazaraki; 134, Vajzë; 135 Nënshat. After Kilian-Dirlmeier 1993.

Mazaraki

In 1968, a carefully built, moderately disturbed cist grave in which two men and one woman were interred was exposed fortuitously by winter rains near the village of Mazaraki, on the south slope of a hill overlooking the Thyamis River at 400 masl (Vokotopoulou 1969b: 191–203; Soueref 1986: 28–34). In the early 1940s, two cist graves had been found just 200 m to the west, but no record remains of any grave goods that might have been preserved in them. Excavation of the grave discovered in 1968 produced a rich variety of funerary offerings; in contrast to the assemblages at Kalpaki and Elaphotopos, Mycenaean influence is strongly represented at Mazaraki.

Objects of secure Aegean derivation include a painted stirrup jar, a three-handled alabastron, a cruciform sword, and two leaf-shaped spear points. The stirrup jar has been dated to LH IIIA–B or LH IIIB on stylistic grounds (Vokotopoulou 1969b: 199–200; Papadopoulos 1976: 284; Wardle 1977: 191). The three-handled alabastron is considered a local (provincial?) imitation whose shape and decoration point to prototypes in LH IIIB (Vokotopoulou 1969b: 200). Other sherds from Mycenaean vessels were recovered, among them, a kylix stem found in the fill of the grave and assigned to LH IIIC (Vokotopoulou 1969b: 202–203). The cruciform sword (Figure 8.5: 138; Vokotopoulou 1969b: fig. 4), unique in Epirus, is of an Aegean type that is normally found in LH II and LH IIIA1 contexts in southern Greece, according to Wardle (1977: 191), who however endorses a LH IIIB date for the stirrup jar and thus for the burial. Vokotopoulou (1969b: 193) finds in the sword aspects of earlier D I (LH IIIA1) and later D II (LH IIIB) forms, and for this reason and because of certain formal characteristics that closely parallel those of daggers and swords from Kalpaki and Kephallenia, also favors a LH IIIB date. The dating of the cruciform sword has been revised by Kilian-Dirlmeier (1993: 62, pl. 25.138), who assigns it to Sandars Class D, Type I, variant 1f, with a chronological range of LH IIIA2–LH IIIB; this revision makes an LH IIIB date for the context relatively secure. Three daggers and two leaf-shaped spear points from the Mazaraki grave, all of Aegean type, have been assigned to LH IIIB as well.

Recognizable northern influence is to be found chiefly in an amber bead, a few bronze rings and spiral disks, and one flame (fiddle)-shaped spear point. The spear point (Vokotopoulou 1969b: 198, fig. 6g) is of a common type assumed to be of northern origin. By comparison with European examples placed in Halstatt A (approximately 1230–1100 B.C.), Vokotopoulou (1969b: 198) assigns this specimen to LH IIIB. Locally produced goods are represented by a single-handled kyathos similar to those recovered at Elaphotopos and Kalpaki, and a dipper in a similar fabric. Abundant sherds from handmade coarse vessels were also discovered in the grave fill. Other small finds included beads of chalcedony, faience, rock crystal, and quartz; a fragment of bone from a weapon handle; and two bronze rings.

Kastritsa

The hill of Kastritsa lies on the southeastern shore of Lake Pamvotis, a few kilometers southeast of the city of Ioannina, which is situated on the lake's western shore. The hill attains an elevation of 757 masl, and its commanding position, from which the movement of humans and animals in and out of the plain of Ioannina could be monitored, was clearly valued by prehistoric inhabitants. A long history of human occupation on Kastritsa hill extends back through the Neolithic period and into Paleolithic times. Evidence for Bronze Age occupation comes from the investigation of both cist graves and buried occupation debris.

In 1951 and 1952, excavations were carried out on the plain east of Kastritsa hill, where a drainage channel had exposed buried prehistoric pottery (Dakaris 1951, 1952, 1967c: 30–31). Two occupational strata, the lower of Bronze Age date and the upper belonging to Classical and Hellenistic times, were detected, but the two layers were in most places disturbed and mixed together. Copious sherds from handmade vessels were collected, and in fact it was from the pottery of this early excavation that Dakaris developed his typology (categories I–IV) of prehistoric Epirote wares. The fill of the channel also yielded several stems, bases, and body sherds of imported Mycenaean kylikes (Dakaris 1951: fig. 7, 1952: fig. 4; Soueref 1986: figs. 36.8, 38–40, 46.1). Three additional vessels were discovered by chance in the drainage channel in 1964 (Dakaris 1964: 312–313, 1967c: 31–32); among them was a handmade imitation of a Mycenaean two-handled amphoriskos (Dakaris 1964: pl. 351e; Soueref 1986: fig. 47.II).

Two cist graves near the northern edge of the modern Kastritsa village, and one outside the mouth of the Paleolithic cave of Kastritsa, were discovered in the mid-1960s (Dakaris 1964: 312–313, 1966a: 288; Soueref 1986: 36). One of those adjacent to the village contained a Mycenaean stirrup jar (Dakaris 1964: pl. 351d); in the other no grave goods were preserved, but the fill around the grave produced sherds from monochrome vessels of canonical K III type, which may have been originally deposited with the burials of the three bodies found within (Dakaris 1966a: 288). In the cist grave excavated outside the Paleolithic cave, a dagger with a T-shaped handle was retrieved (Figure 8.4: 191; Dakaris 1967c).

The chronology of the finds at Kastritsa appears to encompass LH IIIB and at least part of LH IIIC. The stirrup jar is variously dated to LH IIIB (Soueref 1986: tab. VIII), LH IIIB–C (Dakaris 1966a: 288; Papadopoulos 1976: 334–335), or LH IIIC (Hope Simpson 1981: 177). A date in the latter years of LH IIIB is offered for the T-handled dagger (Dakaris 1967c; Vokotopoulou 1969b: 193–194); this dating is not contradicted by Kilian-Dirlmeier (1993: 83, pl. 30.191), who assigns it to Sandars Type F, variant F2A, with a chronological range of LH IIIA2–Submycenaean times. Finally, the imitation Mycenaean amphoriskos has

been assigned to LH IIIB–C or LH III C (Dakaris 1964; Soueref 1986: tab. VIII).

There are notable contrasts in the composition of the assemblages of grave furnishings at the four cist grave cemeteries. The substantial presence of Mycenaean material culture at Kastritsa and Mazaraki stands in striking contrast to the predominantly northern provenience of the exotic goods at Elaphotopos and Kalpaki, a divergence not easily explained by their respective locations, or with the limited data on Bronze Age Epirus available at present. A plausible explanation is that sporadic rather than universal or regular access to exotica prevailed at inland locations that relied on overland communication and movement of goods. More detailed hypotheses concerning the social and economic implications of burial patterns must await future investigations that fill in the many blank spots in the map of Bronze Age Epirus.

Hoard

A final, usefully differentiated context is the hoard, defined as “any collection of more than one object that was found together other than in a funerary or domestic situation” (Harding 2000: 352). Many types of hoards have been identified, including founders’ hoards, traders’ hoards, personal hoards or treasures, votive hoards, and equipment for the afterlife (Harding 2000: 354). Two collections of artifacts from Epirus are characterized as hoards: one discovered near Stephani in the hills overlooking the Louros River delta, comprising eight double axes, three spear points, and two fragments of a bronze bow (Andreou 1994: 243); and a second from Katamachi consisting of five bronze double axes, a chisel, and a small anvil (Vokotopoulou 1972; Papazoglou-Manioudaki 1988: 139, pl. 90). The collection from Stephani was turned over to archaeological authorities by local residents, and little contextual information is available. It is possible that this “hoard” is actually a collection of objects looted from Bronze Age burials. The Katamachi hoard is unusual in that the objects show no use wear, and were hidden at an isolated location at 1,200 masl. It seems likely that both were traders’ hoards or personal hoards, given the practical yet highly valuable nature of the objects. Double axes in Epirus are working tools, not miniatures or votives as are found in the Minoan/Mycenaean world.

Chronological Development

The material remains suggest three broad phases in the history of contact between Epirus and the Mycenaean world: a first phase of tentative, coastal contact corresponding to LH IIIA1 and earlier; a second marking the peak of Mycenaean influence during the heyday of palatial civilization in LH IIIA1–LH IIIB; and a final phase in LH IIIC and beyond that witnessed a decline in Mycenaean overseas activity and the strengthening of northern influence in Epirus (Soueref 1986: 166–169; Papadopoulos 1987b). The transitions between phases are not neatly defined or chronologically precise, and

moreover, the experience of Mycenaean influence took on diverse forms determined principally by geography. Contact with seagoing representatives of the Mycenaean world can be demonstrated for restricted locations on the Epirote coast, but even this contact was discontinuous, amounting to small pockets of face-to-face interaction. The Mycenaean physical presence in those few locations never extended more than a few kilometers from the coast. Inland communities received Mycenaean objects via traditional routes of communication, mainly along north–south-trending river valleys. Only on the coast—and on present knowledge, only on a coastal strip from the lower Acheron valley to Parga—is it possible to imagine Mycenaean complicity in fundamental changes in social and economic organization; however, some diffusion throughout Epirus of bronze-working technology partly of Aegean origin, and even limited emulation of Mycenaean cultural practices, can be proposed (see below).

There is little physical evidence for contact with the Mycenaean world before LH IIIA1 (i.e., the first half of the 14th century B.C.). Bronze weapons and implements of Aegean type appear as early as Mycenaean ceramics. A limited number of straight-backed knives and swords with horned-shaped hilts were thought to date as early as LH II–IIIA on typological grounds (Soueref 1989b: 67), but the swords are more likely of LH IIIA date (Kilian-Dirlmeier 1993: 47), and the find contexts of these Aegean bronze types do not allow us to be certain of the timing of their arrival in Epirus. The earliest well-dated context is the tholos tomb at Kiperi, from which the Mycenaean pottery ranges from LH IIIA1 to LH IIIA2–B, indicating a use life covering approximately the entire 14th century and perhaps some additional decades on either end. At Ephyra, the earliest Mycenaean pottery belongs to LH IIIA, perhaps LH IIIA1, but because the ceramic material remains unpublished, it is not possible to discuss phasing and ubiquity in detail. The preliminary reports imply, however, that LH IIIA pottery was by no means rare (e.g., Papadopoulos 1980, 1983, 1984). It was apparently in LH IIIA2 (the second half of the 14th century) that Mycenaean objects began to appear at inland settlements such as Dodona, and to the end of LH IIIA or the first years of LH IIIB we may assign the earliest use, at Mazaraki in the interior of northern Epirus, of Aegean pottery and bronze objects as burial goods in cist graves (Wardle 1977: 177, fig. 10 nos. 476, 477; Vokotopoulou 1969b: 191–203).

On the other hand, tentative contacts before LH IIIA would not be surprising in light of evidence for contemporary Mycenaean activity in northwestern Greece and the Adriatic region. In LH II, the standardization of Mycenaean painted pottery was being consolidated in the “core” area, and spreading to outlying areas such as Thessaly and Aitolokarnania, where regional styles persisted for a time (Mountjoy 1990). Fine-quality, imported Mycenaean ware was common at Thermon by LH IIA, and at Ayios Ilias by LH IIB (Wardle 1977: 162–168). In the Ionian Islands, Zakynthos and Ithaka were in touch with the early developments of Mycenaean ceramic style, manifest in

MYCENAEAN PRESENCE IN SOUTHWESTERN EPIRUS

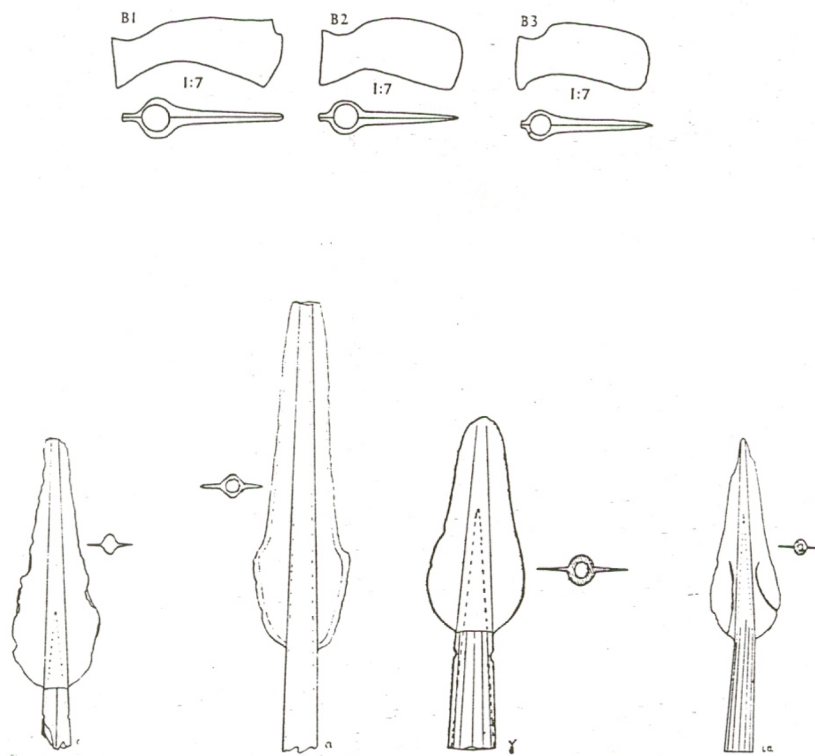


Figure 8.6 Bronze artifacts of “northern” type from Epirus. After Hammond 1967, Souerref 1986.

painted fineware cups of LH I–IIA, and substantial corpora of Mycenaean forms in LH II–IIIA1 (Souyoudzoglou-Haywood 1999: 103, 106, 124–125). Substantial quantities of Mycenaean ceramics were already reaching the Tyrrhenian coast of Italy and the Aeolian islands by LH I (Vagnetti 1993: 145–146; Tykot 1994: 69–70, tab. 2), and at Pazhok in Albania Vapheio cups of LH IIA date were excavated in a burial tumulus, although the later date of the associated material makes the chronological significance of these imports uncertain (Harding 1984: 157, 170). Bronze objects, including swords and daggers of Aegean type, were carried to Albania, southern Italy, Macedonia, and Bulgaria in the years corresponding to LH I–IIIA (Kilian-Dirlmeier 1993; Harding 1984: 153–173). By LH IIIA, a Mycenaean tholos tomb and a settlement (Ephyra) with substantial amounts of Mycenaean pottery had appeared on the Epirote coast, where there was no prior evidence of social organization above the tribal level. I believe this evidence suggests prior contact, or at least visits by Mycenaean seagoing vessels, in the 17th–15th centuries as Mycenaean maritime activity expanded to the north and west. Such exploratory visits might leave few if any durable remains. It is notable that the earliest Aegean objects deposited at coastal and inland sites show minimal chronological difference, indicating that the mechanisms by which goods were circulated to the interior were already in place, and probably very ancient indeed.

The period from LH IIIA1 to late LH IIIB, in calendar years ca. 1400–1200 B.C., marks the time of greatest contact with the Mycenaean world, coinciding with the rise and fall of the Mycenaean palaces and the apex of Mycenaean expansion and influence overseas. This second

phase witnessed the foundation, growth, and decline of the settlement at Ephyra (LH IIIA1 or 2–IIIC), and the use life of the tholos tomb at Kiperi (LH IIIA1–LH IIIA2/B). In these two centuries, Mycenaean influence in both ceramic and bronze commodities was strong, but even this relatively vigorous exchange took the form of a mixture of imported goods and locally or provincially manufactured objects that combine Mycenaean with local or Balkan/central European traits.

In LH IIIB (ca. 1310–1190), Mycenaean material culture spread widely throughout coastal and inland Epirus. Though the Kiperi tholos may have gone out of use early in LH IIIB, the cyclopean wall found there, as well as those at Ephyra, Kastriza, and Ayia Eleni in the lower Acheron valley, cannot have been built before (and probably not after) LH IIIB. Major fortification walls were constructed at a few of the largest sites of the Mycenaean core area (e.g., Mycenae, Tiryns, Thebes, Gla) in LH IIIA2, but most of the other Mycenaean fortifications belong to LH IIIB (Loader 1998: 60–61). There is no reason to imagine such defensive architecture in Epirus at the time of its early development, but construction dates in the first half of LH IIIB are not unlikely. The settlement of Ephyra prospered in LH IIIB, and Mycenaean pottery and bronzes continued to be imported there into LH IIIC. Other cist grave cemeteries of the interior now join the list with pottery, bronze swords and spear points, and other small finds of LH IIIB date; most continued to be used into LH IIIC. It seems that a very active phase of contact encompassed the latter half of LH IIIB and early LH IIIC, probably reflecting influences from the Ionian Islands.

The merging of traditions in a distinctively Epirote product is especially evident in bronze work. Many bronze knives, double axes, spear points, daggers, and swords are of purely Aegean type (Figures 8.2–8.5), but by LH IIIB if not earlier, local artisans in Epirus and southern Albania developed an independent metalworking tradition by modifying canonical forms to create hybrids that combine Aegean and central European styles (Prendi 2002: 93). Wardle (1993: 128–136, figs. 4, 9) notes such idiosyncrasies as the use of flanges on one side of the hilt only on two type F swords from Kalpaki (Kilian-Dirlmeier 1993: pl. 32.207, pl. 33.210) and a type E sword from Paramythia (Wardle 1993: fig. 4.4), as well as a group of spear points with faceted sockets from Mazaraki, Kiperi, and Paramythia in Epirus (Wardle 1993: fig. 9) and Vodhinë and Barç in Albania that combine Helladic (foliate or leaf-shaped) and central European (flame-shaped) traits. There is often disagreement among experts on the origins of these non-canonical forms (Soueref 1986: 91–105). Gilles Touchais (2002: 205) cites the example of horned type C swords, for which four different origins of manufacture have been proposed. In LH IIIB and IIIC, single-blade axes, spear points, and rings and bracelets with antithetical spiral terminals show clear signs of the growing influence of northern traditions and styles (Figure 8.6; Soueref 1986: 67–68).

The corpus of Mycenaean-style pottery shows less deliberate effort at local imitation; rather, the Mycenaean painted pottery is mainly imported from a provincial Mycenaean center or centers. The importation of Mycenaean vessels was maintained throughout LH IIIA–IIIC, though the years of greatest engagement seem to have varied from place to place. The fact that the LH IIIB vessels have a more provincial look than the LH IIIA imports is not surprising in light of the fact that local styles and production were developing at that time in the Ionian Islands as elsewhere in the Mycenaean world (Souyoudzoglou-Haywood 1999: 72; for Macedonia and southern Italy, see Buxeda i Garrigós et al. 2003). If a local industry in handmade imitations of Mycenaean shapes did come into being in mature LH IIIB, the repertoire was limited and the few known examples are poor in workmanship.

Although contact and exchange with the Aegean world slowed after the collapse of Mycenaean palatial society, they did not cease, and therefore, a firm boundary drawn at the transition from LH IIIB to LH IIIC (ca. 1200 B.C.) would be artificial and would mask considerable evidence for continuity. In fact, LH IIIB–IIIC was an active time for maintaining contacts with Aegean influences outside Epirus, probably filtered through the Ionian Islands, which prospered in a “western Greek koiné” encompassing LH IIIC and Protogeometric styles. In Epirus and southern Albania, LH IIIC and Submycenaean pottery is found in tumuli alongside central European weapons, and bronze weapons and other objects showing Aegean influence persist in burials well into the EIA (Prendi 2002: 96). Nevertheless, with the collapse of the expansive maritime

forays of the Mycenaean palaces, certain changes were bound to occur in Epirus. Influences arriving overland from the north (“Balkano-Danubian”: Hammond 1997: 45), already emerging in LH IIIB, continued to gain momentum as coastal contact declined. Some coastal sites, including Ephyra, continued to be important local centers in touch with the Ionian Islands, but the unique social and economic organization developed under Mycenaean influence along the southern Ionian coast (described below) could not long outlive the conditions of interregional trade that spawned it. Although the community persisted and continued to use objects of Aegean inspiration, Glykys Limin/Ephyra ceased to function as a port of trade intimately connected with the Mycenaean economy.

The tumulus as a burial form was adopted in Epirus, probably in LH IIIC, under Balkan influence from southern Albania, and continued in use for several centuries thereafter. The burials are typically in cists that contain grave goods of mixed Aegean, Balkan, and central European type. Many graves, dating from the early 12th century to the end of the second millennium, still contain vessels and bronze weapons of LH IIIC and Submycenaean type (Andreou 1983, 1984; Andreou and Andreou 1999; Douzougli 1996c; Wardle 1993), though most are imitations or hybrids rather than imports. The three tumuli excavated at Ephyra may have been used before LH IIIC (Papadopoulos 1990: 364), though I find this unlikely, particularly if the Albanian tumuli thought to belong to the EBA are re-dated to the LBA or MBA at the earliest (Harding 2000: 101; Bejko 2002a: 175). The mixed deposits associated with the tumuli at Ephyra will not resolve the question.

The main concentration of tumuli is in central and northern Epirus, however, signaling a general northward shift in the sources of influence on cultural practice. Bronze weapons and implements of northern type are joined at the end of the Bronze Age and in the EIA by new ceramic types, including matt-painted ware (known variously as K IV, Macedonian, Northwestern, Boubousti, or Devollian) and the closely related, locally produced Orange-red ware (Korkuti 1969; Wardle 1977: 173–181; Vokotopoulou 1986). These handmade wares, well formed and evenly fired, signal a notable advance in ceramic technology that may indicate the introduction of kiln firing in Epirus (Wardle 1972: 204). In ceramics as in funerary behavior, the ultimate source of knowledge and goods was probably southeastern Albania, carried along inland river valleys and passes connecting north and south. The influx of Balkan material culture and traditions was a general trend in northern Greece at the end of the Bronze Age, and likely an effect rather than a cause of the unraveling of the Mycenaean world. Rather than reflecting a massive migration from Albania, Macedonia, and Thessaly, the foreign elements evident in Epirus in the last centuries of the second millennium B.C. presumably involved the movement of goods, technology, and traditions as a result of relationships developed gradually, already apparent in

LH IIIB and possibly even initiated in some cases by the mobility of goods and knowledge stimulated by interaction with the Mycenaean world.

Origin and Proliferation of Mycenaean Material Culture in Epirus

On present evidence, most or all of the contact points for Mycenaean people, goods, and knowledge were coastal, so it is to the sea that we should look for the bearers of Mycenaean civilization. The closest parallels for the Mycenaean artifacts of Epirus are found in Aitolokarnania and the Ionian Islands. The available evidence supports a tentative hypothesis that an earlier thrust into coastal southern Epirus from Aitolia (LH IIIA1–IIIB early), based on parallels in tholos tomb architecture and Mycenaean painted pottery between Kiperi and Ayios Ilias, was followed by close ties with the Ionian Islands—particularly Lefkas, Kephallenia, and Ithaka—in LH IIIB and LH IIIC, demonstrated by similarities in metal and ceramic objects of provincial manufacture. The recent discovery of Mycenaean pottery in a road-cut stratigraphic profile at Skaphidaki on the shores of the Ambrakian Gulf (see site entry, Chapter 4, and discussion of pottery, Chapter 5) lends weight to the Ionian Island connection in mature Mycenaean times. Several sherds recovered at Skaphidaki come from larger vessels decorated with wide horizontal bands, indifferently executed on a provincial-looking fabric. Such decoration on jugs, hydrias, and amphoras is especially common on Lefkas and Ithaka in LH IIIB, where these forms were manufactured locally (Souyoudoglou-Haywood 1999: 34, 104, 106). The Skaphidaki site also calls attention to a previously unknown entry point for Mycenaean goods on the Ayios Thomas peninsula. A counter-movement of influences from Epirus to the Ionian Islands may have included some ceramic types, such as the characteristic K II/III handmade pottery and a fluted kantharos at Polis Cave on Ithaka of “northern Greek and Albanian type” (Souyoudoglou-Haywood 1999: 141). More important, however, are metallurgical links manifest in “northern” spear points and Type F swords at Ithaka and Kephallenia, which show that production centers in Albania and/or Epirus were of more than merely local interest (Wardle 1977; Souyoudoglou-Haywood 1999: 141). At Sovjan in southeastern Albania, a stone double axe mold was discovered in a Late Bronze Age level in 2001 (Lera and Touchais 2002: 641, ns. 22, 23). Together with previous evidence from Maliq and Sovjan in the form of stone molds and fragments of ceramic bellows, this find strengthens the case for a local metallurgical tradition and a probable production zone supplying Epirus and the Ionian Islands. These connections were chiefly late in the Mycenaean sequence (LH IIIB–IIIC).

There is to date little evidence that Mycenaean goods were transported to Epirus over land routes from the east. The Pindos mountains appear to have been a strong barrier to communication, with the result that Macedonian and Thessalian influences, direct or indirect, were minimal

throughout prehistory. Communication was instead served by several NS-trending river valleys and plains providing access from the coast to the interior of the country. It was on these ancient paths that Mycenaean objects traveled along with local goods and their bearers. From the known points of entry, we may indicate several possibilities (Figure 8.1). Starting at the bay of Glykys Limin and the settlement of Ephyra, the valleys of the Acheron, Vouvos, and Kokytos rivers provided access to interior locations. From the low-lying areas around Nikopolis and the Ayios Thomas peninsula, the journey north to Dodona was accomplished via the Thesprotiko plain or the Louros River valley. From the north, regular and profound cultural exchanges with southern Albania along the Aaos and Kalamas valleys are beyond doubt, but because the natural routes have not been thoroughly and systematically searched, we currently lack the data to adequately demonstrate their exploitation in the Bronze Age.

Cores and Peripheries: The Place of Epirus in the Mycenaean World

There is a measure of consensus that the extent of a Mycenaean “core area” during the palatial period of the 14th and 13th centuries B.C. encompassed the Peloponnese and portions of central Greece, including Attica, Boeotia, and Euboea (Feuer 1999: fig. 2; Demakopoulou 1988; recent discoveries at Dimini and in regions such as Phokis indicate that the core will need to be reconfigured). Within this zone, Mycenaean material culture prevailed, and it is presumed that communities were integrated into the Mycenaean social and cultural sphere (broadly speaking, possessing common language, customs, and religion), if not politically and economically incorporated into palace centers. It is increasingly recognized that the core was in none of these spheres of life monolithic, however (Galaty and Parkinson 1999; Cherry and Davis 1999). Political integration of Mycenaean polities into a single Mycenaean state was never achieved (Thomas 1970; Wright 1984), and most centers exerted political control over relatively small territories. Recent research in archaeology and Linear B studies indicates that even in those territories, many aspects of local economy and daily life lay partly or entirely outside the control of the palaces (Halstead 1988, 1992a, 1999). Variability in material culture in the core area (e.g., pottery: Mountjoy 1990) shows that the ties binding Mycenaean communities were often loose.

Moving beyond the core, however, one encounters patchier data and considerable ambiguity in determining the extent of incorporation, or even engagement, with the Mycenaean heartland. Most recent reconstructions of Mycenaean contact with outlying regions begin from some form of core-periphery model, making the assumption—explicit or implicit—that Mycenaean palatial societies existed at a higher or lower level of socio-economic complexity than surrounding societies with which they interacted (Harding 1993: 154). Thus, while Mycenaean centers are seen to form a core to the peripheries of northern Greece, southern

Italy, and many of the Aegean and Ionian islands, they may simultaneously have played the role of periphery to a core of Near Eastern states in the Levant, Egypt, and Mesopotamia. Yet, in applying a core-periphery model to specific locations outside the Mycenaean core area, one is beset with conceptual and definitional problems (Feuer 1999; Soueref 1999; Andreou and Kotsakis 1999). It is always easier to paint cores and peripheries in broad strokes and on larger scales (Frank 1993; Kilian 1990) than to define core-periphery relationships and identify their dynamics locally.

Models of core-periphery relationships

The essence of most core-periphery models of the Mycenaean Bronze Age is that centers arose in the core area, which served as production and distribution zones for manufactured products of industrial or prestige value (Harding 1993). Mycenaean core states exploited outlying areas—the periphery—for raw materials lacking in Greece, and these peripheries drew upon the core area for their industrial needs. Jane Schneider (1977: 25) summarized this model: “it is possible to hypothesize a pre-capitalist world-system, in which core areas accumulated precious metals while exporting manufactures, whereas peripheral areas gave up those metals (and often slaves) against an inflow of finished goods.” Mycenaean rulers and other elites attached to the palaces maintained their elevated social positions through privileged access to the metals (and certain other material such as amber) that could be fashioned into effective weapons and accumulated as markers of wealth and status. Through this privileged access, no doubt founded on a pedigree of military success, palace centers were able to mobilize labor, subsistence goods, and raw materials such as wool and flax from the surrounding territory to sustain the production of finished goods. These products, which included bronze weapons, linens, and perfumed olive oil packed in attractive painted stirrup jars and alabastra, were exported to ensure an uninterrupted return flow of raw materials that preserved the ability of palaces to continue their conspicuous consumption and retain the support of attached elites and craftspersons. Given the archaeological and Linear B evidence, this seems a reasonable reconstruction of the broad outlines of Mycenaean interest in interregional trade. Yet in outlying areas such as Epirus, we witness a curious mix of imported objects from the Mycenaean heartland and from “provincial” or “Mycenaeanized” centers outside the core area, as well as locally produced bronzes and ceramics fashioned after Aegean or hybrid models. How then is it possible to position Epirus in the matrix of core-periphery relationships among heartland, provincial, and peripheral communities?

The terminology employed to describe the range of interacting entities outside the core and to characterize the interactions is profuse and confusing: there are “borders,” “frontiers,” “margins,” and “semiperipheries,” to name some of the most common terms. Christopher Chase-Dunn

and Thomas Hall (1997: 36) define two kinds of core-periphery relationships within the broader framework of a world systems approach. In *core-periphery differentiation*, societies at different levels of complexity and population density interact with one another, with certain effects on social and economic organization, but free from political, social, or economic domination of one partner by the other. In *core-periphery hierarchy*, one polity exerts economic, political, and/or ideological domination over the other, manifest in political conquest, unequal exchange, extraction of resources through raiding, taxation, or tribute, and other exploitive practices. Nick Kardulias (1996: 9) prefers to add the concept of core-core relationships to the case of the prehistoric Aegean. In his view, Mycenaean trade with the Levant and Egypt furnishes an example of the interaction of two core areas. Moreover, Kardulias perceives a similar core-core interaction among “early state modules” (Renfrew 1975: 12–21, 1986: 1–4) in the Mycenaean world, for example among the nascent palace centers of the Argolid. These centers were at least for a time “peer polities” (Renfrew and Cherry 1986) that did not exhibit meaningfully different levels of social complexity and population density.

The forms of interaction that may occur between cores and peripheries include the exchange of bulk goods, political or military interchange, prestige goods exchange, and information and cultural flows (Chase-Dunn and Hall-1991, 1993, 1997). Other terms for similar processes are invasion, peaceful migration, trade, and stimulus diffusion (Feuer 1999: 10). Across the Mycenaean periphery, trade/exchange and flows of information and cultural influence are easiest to discern, since their traces are often encoded in durable objects—although it remains problematic in most cases to reconstruct the precise mechanisms and dynamic interactions by which they were realized. Characterizing the interactions as peaceful or violent, systematic or ad hoc, is particularly difficult because we rarely have much understanding of the native societies and how they were organized. This question of indigenous social and economic organization in the lower Acheron valley is vital, and I take it up in detail below.

Core-periphery interactions often stimulate certain changes in peripheral zones, including shifts in production, intensification of particular techniques, expansion of resource bases to create surpluses, and changes in settlement hierarchy, all in response to new requirements and opportunities. One mechanism of change is the transfer of technology: Kohl (1989) cites bronze working as an easily transferable technology that diffused from cores to peripheries in the southwestern Asian Bronze Age. He argues that the proliferation of this technology supported a transformation to a multi-centered world system, with many small, interacting nodes of production and exchange. In Epirus, the transfer of bronze-working technology is apparent in local traditions of the LBA, though whether this stimulated more profound changes in social and economic organization is difficult to know, again because

we know relatively little about indigenous societies before the transfer occurred. Nevertheless, such adjustments and realignments may often have stimulated deeper changes in social and economic complexity. From the point of view of organizational typology, most peripheral communities existed at a tribal level—essentially acephalous or egalitarian—but with evidence of an emerging warrior elite across Europe in the Bronze Age (Gilman 1981). This nascent warrior class, visible in burials containing panoplies of their weapons, was well placed to profit from the transfer of technologies and commodities from bureaucratic, urban states. Persons or families possessing power and prestige at the local level (probably initially involving achieved status) could manipulate the flows of goods and knowledge to establish their power on a more permanent basis. At this juncture we witness the formation in the periphery of chiefdoms, intermediate-level societies that provide an evolutionary bridge between acephalous societies and bureaucratic states (Earle 1987: 279). Timothy Earle defines chiefdoms as “regionally organized societies with a centralized decision-making hierarchy coordinating activities among several village communities” (Earle 1987: 288). In the early Mycenaean period, many small centers that later became palace-based states possessed the characteristics of chiefdoms (Wright 1996b). Although we do not expect that state formation occurred in Epirus, it is important to ask whether interaction with the Mycenaean core area stimulated the formation of chiefdom-level organization.

One problem with core-periphery and world systems approaches is that they tend to emphasize asymmetrical relations between a dominant core and a passive periphery, viewing developments in the periphery as driven and directed by external forces emanating from the core. There is often little scope in this perspective for the internal dynamics of core-periphery or host-colony interaction in the periphery; that is, there is no agency in the periphery (Stein 1999: 10–26). In reality, the variability of Mycenaean colonies and other contacts in the periphery reflects the interplay of local dynamics and external conditions (Tartaron in press). As I will argue below, relations of more symmetrical nature prevailed between Mycenaeans and natives at Glykys Limin, creating unique and historically contingent social and economic conditions influenced only indirectly by events in the core area.

Perhaps the most comprehensive application of a core-periphery model to the Mycenaean hinterland has been Bryan Feuer’s analysis of Thessaly in the Mycenaean period (Feuer 1983, 1994, 1999). Feuer envisions three zones within Thessaly, defined mainly by ecological variability, which form a continuum of sharing or affiliation with Mycenaean culture. A zone of coastal contact around Volos, where the greatest degree of connection to the core area existed (the vast Mycenaean complex at Dimini was probably the Mycenaean palace center of Iolkos; Adrimi-Sismani 1994, 1999; Sarris 2002), is termed by Feuer an “inner border,” reflecting “a lesser degree of integration,

but still largely within the Mycenaean cultural sphere” (Feuer 1999: 11), focused on Iolkos, “which very likely was the center of a principality similar to, but likely somewhat less powerful than, those of Mycenae, Thebes, or Pylos” (Feuer 1994: 212). Moving inland to the interior plains, the climate becomes more continental and the remains of Mycenaean contact are more restricted chronologically, beginning later and ending earlier, and are less abundant. Feuer (1994: 212) calls this zone an “outer border.” Finally, further inland lie the “imposing and virtually impenetrable mountains” of the “frontier.” In this zone, Late Bronze Age sites are unknown and the mountains demarcate the northern border of the Mycenaean world (Feuer 1994: 213). Beyond even the frontier, there is a “margin,” or a zone that does not interact directly with a core, but supplies materials crucial to the operation of a world system (Sherratt 1993). Amber from the Baltic region, and metals from central Europe, furnish examples of raw materials moving into the Aegean through multiple exchange links, but without face-to-face contact between source and final recipient. These far-flung links were stimulated by demand in Aegean and Near Eastern urban cores, which fueled an economic expansion in marginal areas and what Sherratt calls “regional exchange cycles.”

While Feuer’s work and the recent discoveries at Dimini demonstrate a profound integration of the Thessalian coast around Volos into the Mycenaean world, we must require a similar standard of research formulation and archaeological data for each case. It is not difficult to spot areas where Mycenaean influence is advanced more on wishful thinking than hard data. The coast of central Macedonia is a case in point: in the past, Mycenaeans have been implicated in new domestic and funerary architecture, changes in agricultural practice including the concept of central storage, and a transformation to a hierarchical settlement pattern, but these notions are often speculative and may not stand up to the scrutiny of new data from sites like Toumba Thessalonikis (Andreou and Kotsakis 1999: 107–108). To cite one example, the Mycenaean pottery in central Macedonia shows little technological influence over local ceramic traditions in the LBA, and the wide distribution of Mycenaean-style vessels argues against a facile interpretation as “prestige goods” that reinforced an existing vertical social differentiation (Kiriati et al. 1997). This result points up the variability of the core-periphery encounters, and underscores the need for more data and careful study of material and non-material aspects of each native society.

Integration and peripherality

Feuer’s assessment of the Thessalian case focuses on one important criterion for defining the core-periphery relationship: the degree of integration achieved between two interacting entities in the political, cultural, social, and economic realms (Feuer 1999: 11). When we consider the Epirote case, we see that political integration of local communities into a Mycenaean state is highly unlikely, in

view of the physical isolation from the core area, and the indirect nature of interactions involving goods and persons at a remove from the coast. Kardulias (1996: 13) cites the example of Minoan infiltration of the Aegean, evident in the Minoanization of town planning, pottery, and art at sites like Akrotiri on Thera and Trianda on Rhodes. Although the demand for goods among the Cretan elite stimulated social and economic changes, they were unable to exercise political hegemony because of the physical distances and the number of middlemen involved. Similarly, the sources of most raw materials of interest to the Mycenaeans were situated far inland, with the result that they relied on middlemen to bring them to coastal points of exchange.

We can be equally sure that a limited level of cultural integration, involving the adoption of Mycenaean material culture or cultural practice, *was* part of the Mycenaean encounter with Epirus. The importation and imitation of Aegean-style bronze and ceramic artifacts are indexes of the enthusiasm for such exotic goods, but of more interest is whether these objects were truly restricted in their distribution to particular individuals or social groups, and whether the use of these objects involved more than a superficial veneer, i.e., did their users adopt Mycenaean cultural practices associated with these artifacts? To the first question, we may respond cautiously that both bronze artifacts and pottery were limited in their distributions, the former more so than the latter. Bronzes are restricted mainly to burials, where they give the distinct impression of deceased warriors, and two hoards, but also at a few important sites they appear in disturbed subsurface deposits that are difficult to interpret. The largest number of bronze weapons and implements of Aegean type at a single site—approximately 30—occurs at Dodona, scattered about the later sanctuary area in disturbed strata that make it impossible to know the true contexts of use or final deposition for these items. By contrast, the Xylokaastro (Ephyra)/Nekyomanteion area has been excavated as extensively as Dodona, but has yielded little bronze, except for the chance find of a late Mycenaean sword (Dakaris 1958a, 1958b). The significance of the discrepancy between these two sites, particularly since Ephyra was in close contact with Mycenaean agents, remains uncertain. It is prudent not to place undue emphasis on the scarcity of bronze objects at Epirote sites, since metals are routinely recycled or melted down, destroying evidence of prior use, and because so few sites have been excavated. Yet, at present we lack proof that bronze was widely disseminated among the population, either vertically or horizontally, and obviously many objects were being removed from circulation.

Mycenaean-style pottery, on the other hand, which survives more readily in identifiable fragments, has a somewhat wider dissemination in burial, stratigraphic, and surface contexts (Table 8.2). Excavations at Dodona and Ephyra produced Mycenaean sherds in the hundreds. Outside the major settlements, however, the quantity of Mycenaean

material is quite low. The Nikopolis Project's systematic surface survey contributed only around 54 sherds of Mycenaean type, 25 of them from a single site (Skaphidaki) on the coast of the Ambrakian Gulf, and fewer than 30 from the lower Acheron valley (Tartaron and Zachos 1999: 66). Furthermore, exactly two sherds of Mycenaean type were discovered by the survey outside of the lower Acheron valley and the Skaphidaki site (see Table 5.2). This result underscores the fact that Mycenaean objects, particularly imports, were never in wide circulation. In other regions of the periphery, the extent of technology transfer in Mycenaean ceramics, and its effects on local societies, was variable, as indicated by recent studies of Aegean- and local-style pottery in central Macedonia and southern Italy (Buxeda i Garrigós et al. 2003).

It is a curious fact, as Touchais (2002: 206, tab. 5) points out, that pottery and bronze weapons of Aegean type are rarely found together in Epirus: 23 contexts with weapons only, 13 with ceramics only, and only 4 with both. Two glaring exceptions, however, are the cist grave at Mazaraki and the settlement at Dodona. Although it is tempting to propose that these materials traveled in separate spheres of exchange, with bronze weapons restricted to some kind of elite gift-giving and pottery available to a wider segment of the population, it is unwise to press the current evidence too hard. The abundance at Dodona of both metals and pottery poses serious problems, even if the overall pattern is striking and calls for explanation.

These same data help to address the second question, concerning the extent to which the presence of Aegean objects implies the adoption of Mycenaean cultural practices. Touchais (2002: 208) notes that although Aegean bronze weaponry was deposited in burials in Albania beginning in the Middle Bronze Age, the composition of the panoply was unlike that of southern Greek warriors, suggesting that Mycenaean battle techniques were not adopted. A similar pattern prevails in Epirus. It is noteworthy too that double-axes, though relatively common in burials, settlements, and caches in Epirus, are all functional tools and do not occur in non-functional, votive (e.g., miniature) form as they do in the Minoan-Mycenaean world. This is also the case in Albania (Touchais 2002: tab. 2A).

Mycenaean architecture—in the form of a tholos tomb and a few examples of settlements enclosed by cyclopean masonry inspired by Mycenaean defensive architecture—exists only in a narrow coastal swath where face-to-face contact occurred. The tholos tomb at Kiperi is classically Mycenaean in all aspects, except that local coarseware vessels outnumber Mycenaean among the grave goods. Similarly, the settlements in the lower Acheron valley that were enclosed with cyclopean walls contain predominantly locally produced pottery in the Epirote tradition. Despite these instances of Mycenaean funerary and defensive architecture, it is striking, and perhaps significant, that many Mycenaean architectural forms, including the

MYCENAEAN PRESENCE IN SOUTHWESTERN EPIRUS

Table 8.2 Shapes and find contexts of Mycenaean-style pottery in Epirus.

Site	Context*	Open shapes					Closed shapes			
		Kylix	Cup	Dipper	Krater	Other open	Stirrup jar	Alabastron	Amphoriskos	Other closed
Dodona	E	●				●		●		●
Ephyra	E	●								
Kastritsa	E	●							●	
Krya	E	●								
Ephyra	B	●	●		●		●	●		
Kastritsa	B	●					●			
Kiperi	B	●				●	●	●		
Mazaraki	B	●	●	●						
Neochoropoulo	B		●							
Mazaraki	BF	●								
Aristi	S	●								
Ephyra	S	●								
Mazaraki	S	●								
Skaphidaki	S/E**	●				●				●
Themelo	S	●								
Vouvopotamos	S					●				

* E = excavated, non-burial deposit; B = burial; BF = fill surrounding a burial; S = surface find.

** At Skaphidaki (site N-17), there was no excavation, but sherds were stratified in a road cutting.

megaron and the chamber tomb, were not adopted, so far as we know. A similarly selective adaptation of Mycenaean forms and practices, including some building techniques and central storage facilities, is indicated in coastal and near-coastal central Macedonia (Wardle 1993: 126–127; Andreou and Kotsakis 1999; Andreou, Kotsakis, and Fotiadis 1996: 576–586; Touchais 2002: 206). At Mycenaean Dimini, by contrast, the sprawling palatial-period center includes two large tholos tombs, pottery kilns, and two megaron-type complexes (Megaron A and Megaron B), possibly with a large central court between them (Adrimi-Sismani 1999; Sarris 2002). Around the main megara, many material remains characteristic of a Mycenaean palace center were found: residences, workshops, and storage areas with large storage jars, figurines, metal jewelry, stone tools, spindle whorls, stone molds for jewelry and tools, and a stone weight inscribed in Linear B (Sarris 2002: 6–7). Closer to Epirus, the Ionian Islands witnessed widespread emulation of Peloponnesian tholos and chamber tombs during ceramic periods LH IIIA1–LH IIIB1, but the indigenous character of settlements was preserved in domestic architecture and handmade ceramic traditions (Souyoudzoglou-Haywood 1999: 137, 140).

The Mycenaean-style pottery of Epirus is sufficient in quantity that preliminary thoughts can be offered. The kylix is far and away the most frequent vessel shape, found in settlements and burials, and as surface finds (Table 8.2). Overall, open shapes are more common than closed shapes and are found in all classes of contexts. By contrast, the closed shapes, mainly stirrup jars, alabastra, and amphoriskoi, are more rare and are found primarily in burials. It should be noted, however, that among disturbed

deposits at excavated sites like Ephyra and Dodona, it is not always clear whether material comes from settlements or burials. For example, at Ephyra, some sherds from Mycenaean-type vessels were found near tumuli and may derive from them.

The remarkable prominence of the kylix, and its presence in domestic and funerary settings, provokes questions about just how this vessel was used. As discussed in Chapter 5, the kylix was a ubiquitous shape in the core area, particularly in mature palatial times (LH IIIB), when it served both for wine-drinking during feasts and rituals and as an everyday drinking vessel in both palatial and non-palatial contexts (Wright 1994, 1996a; Galaty 1999: 49–52; Killen 1994; Saflund 1980; Thomas 2004). At the time of its destruction, the palace at Pylos had almost 4,000 (mainly undecorated) kylikes in its pantries ready for conspicuous consumption in the form of communal feasting and other rituals (Galaty 1999: 50–51). Dietler (1990) has suggested that the acquisition of wine-drinking and its attached rituals may play a transformative role in the emergence of social and political complexity, and Wright (1996a: 293–307) has applied this model to the emergence of Mycenaean complexity in the Shaft Grave era. We might envision an emerging warrior elite in the coastal zone of the lower Acheron River, seeking to enhance and consolidate their status by emulating Mycenaean practices in competitive feasting with exotic ritual equipment such as the imported kylix, thus setting into motion a movement toward greater social complexity (see discussion of conspicuous consumption below), but we cannot be sure of the actual practices and rituals involved. There are indications that the value and function of Mycenaean vessels in Epirus were transformed to fit local customs.

The appearance of open shapes in tombs is an example of “cultural drift” from practice in the Mycenaean heartland that is characteristic of the Ionian Islands, and may derive from there (Souyoudzoglou-Haywood 1999: 140). In the core area, kraters may have been used alongside kylikes to mix wine with water (Wright 1996a: 303–305), but this was apparently not the case in Epirus, where kraters are rare. It may be that open and closed vessels were differently valued and viewed as having distinct uses. Open vessels had obvious everyday uses for drinking, but also facilitated feasting and rituals involving wine and libations. Closed vessels such as alabastra and stirrup jars, with their precious contents of perfumed olive oil or wine, perhaps held a premium value and a more restricted circulation. If so, we might expect their ultimate disposal in graves rather than settlement debris. In ritual performances and feasting, the participants may have required few closed vessels but many drinking cups, hinting at one explanation for the quantitative predominance of open shapes. Moreover, the closed Mycenaean shapes do not appear to have effectively replicated forms with which the indigenous populations were familiar. Finally, open vessels were easier to manufacture locally with prevailing ceramic technology (see Figure 5.9), thus they were more “transferable.” Some or all of these explanations may be valid, but we can only speculate in the absence of interpretable, non-burial contexts. We are entirely ignorant of the pre-existing customs to which Mycenaean ceramics may have been adapted.

Social and Political Complexity

It is reasonable to assume that those communities in direct contact with Mycenaean agents were best positioned to adopt cultural practices associated with specific material classes, but the richness of Mycenaean material at Dodona suggests that the reality of cultural emulation was complex. Moreover, the data from the coastal contact regions are far from unequivocal in their behavioral implications. Nevertheless, the inland sites of Epirus possess only portable goods of Mycenaean type, tracing the movement of goods from the coast along well-traveled overland routes and signifying in all likelihood a superficial engagement with Mycenaean cultural practices. Only on the coast are Mycenaean features that have no functional precedents or comparable prior investment in organization or labor found, and it is there that we must look to evaluate the hypothesis that changes in social or economic organization were stimulated by contact with the Mycenaean world. Intensive engagement by Mycenaean agents would be required to impact the social and economic organization of local inhabitants, and this is conceivable only at a handful of coastal locations such as the lower Acheron valley.

Social organization is expressed in the structure and scale of social relations, for example by the kinds of social units that make up a society, by the centralization or decentralization of decision-making, and by the mechanisms through which hierarchies emerge when some

individuals or groups gain privileged access to resources and power. A well-known typology of social organization is the evolutionary typology developed in American anthropology (Sahlins 1963, 1968, 1972; Service 1971, 1975; Fried 1967, 1975), and later modified by anthropologists and archaeologists (e.g., Earle 1987, 1991, 1997; Johnson and Earle 1987; Peebles and Kus 1977; Creamer and Haas 1985). The basic evolutionary types are band (also known as mobile hunter-gatherers), tribe (also known as segmentary societies), chiefdom, and state, each evolutionary stage implying greater scale and complexity of social relations. Much criticism has been leveled at the notion of unilinear evolution that initially buttressed this framework, and many observers bristled at the pejorative connotation of statements that societies organized as chiefdoms are more “primitive” than those organized as states. Most archaeologists disavow the uncritical use of these types as “stages” in a mechanistic (and ahistorical or historically untenable) evolution of society (e.g., Yoffee 1979; Dunnell 1980), but the types themselves remain useful because they describe effectively the broad range of ways that humans have organized themselves from the earliest human social groups to the present day, and because they lend themselves well to cross-cultural comparison (Earle 1987: 280).

Of the four types, the least and most complex, i.e., bands and states respectively, can be ruled out as plausible organizational models of Bronze Age Epirote society. Tribes and chiefdoms are of interest, specifically whether some Epirote communities were stimulated by contact with the Mycenaean world to develop the more complex organizational attributes of chiefdoms. Tribes, or “segmentary societies,” are made up of small residential communities or kin groups that are economically self-sufficient, but often interdependent politically or ceremonially. The economy is based on subsistence agro-pastoralism, and neither economic resources (such as surpluses) nor decision-making are centralized. Leadership arises on an ad hoc basis for special purposes (such as warfare), and this leadership is personal, based on such traits as prowess in battle or charisma. Status is therefore achieved, not inherited from parents or kin. Individuals or kin groups may acquire elevated status through skills or roles in ceremony, craft production, warfare, etc., but there are no structural positions or offices that bestow status on individuals who hold them. Tribes are considered to be egalitarian in nature, so that there should be little evidence of hierarchy or ranking, either within or among individual communities. The formation of tribal structures has been linked to the emergence of agro-pastoral economies, to conflict or warfare with neighboring groups, and with environmental or resource stress (Creamer and Haas 1985: 738).

The type “chiefdom” provides a framework for the development of centralized decision-making hierarchies and social inequality in non-state societies (Earle 1987: 279; Renfrew and Bahn 2000: 174–177). In chiefdoms,

MYCENAEAN PRESENCE IN SOUTHWESTERN EPIRUS

Table 8.3 Archaeological correlates of tribes and chiefdoms (after Creamer and Haas 1985).

<i>Trait</i>	<i>Tribe (Segmentary Society)</i>	<i>Chiefdom</i>
Settlement pattern	Similar units dispersed over a definable region	At least two levels of site hierarchy + a structurally distinct central place
Architecture	No differentiation in residential architecture	Some differences in size, quality of residential architecture, reflecting status differentiation
Centralized labor organization	Communal labor projects only at the community or multi-community level	Communal labor projects at regional level, but not exceeding capacity of bounded population's work for a single "off-season"
Surplus production	Little surplus beyond household or community level	Intensification of food production to create surplus
Storage	No communal storage beyond community	At least some centralized storage facilities
Specialization	Some religious specialization (shamans) and limited specialized production at community level	Some specialized production, especially sumptuary goods; craft specialization associated with storage and central places
Rank	Limited evidence of status differences in burial goods; continuous range of statuses	Rank-ordered burials with clear status levels
Status goods	Infrequent	Caches or large graves with deposits representing valuables removed from circulation
Regional trade	Possibly localized exchange of some subsistence goods	Possibly extensive exchange of subsistence and sumptuary goods
Interregional trade	Possible importation of a few sumptuary goods; dispersed among populace and not concentrated	Significant import of valuables from outside area, which are restricted to higher-status levels of society
Boundaries	Marked by physical separation, changes in material culture, or construction of defensive features	Similar to tribe, but more clearly defined
Stress	Indicators that tribe was exposed to warfare and/or severe stress at the time of its formation	Similar to tribe, but warfare may be more intense

social status is differentiated by lineages—groups claiming descent from a common ancestor—and these lineages are ranked in prestige. The chief is head of the senior lineage, and a person's status in society is established by closeness of relation to the chief's family. Power is concentrated in the senior lineage, with the result that leadership is hereditary, passed on from one generation to the next. Social ranking can often be recognized in differences in domestic architecture and in disparities in the richness of burials and grave goods.

Certain attributes have been attached to chiefdoms around the world, based on ethnographic as well as archaeological and ethnoarchaeological research. Chiefdoms are associated mainly with farming and herding economies, in which intensification of production is encouraged to create a surplus, a portion of which is paid to the chief, who redistributes it among the population (redistribution) or retains it as accumulated wealth or to support elites and crafts specialists dependent upon him (mobilization). There is often a permanent, physical center of power ("central

place") that contains the chief's residence, and possibly temples or other ritual or ceremonial spaces used by the entire polity. Centralized storage facilities and specialized craft production may also be found at central places. Social differentiation is reflected in a multi-level site hierarchy that includes a distinct central place and other sites ranked in size and function. External trade is more prominent than in tribal societies, as importation of sumptuary or prestige goods, which are restricted to higher-status individuals and lineages, plays a significant role in maintaining political and social control. Chiefdoms lack, however, many traits of state-level societies, such as centralized, urban bureaucracies and class stratification.

Several studies have attempted to identify archaeological correlates of tribes and chiefdoms (Table 8.3; Creamer and Haas 1985; Peebles and Kus 1977; for a basic overview see Renfrew and Bahn 2000: 173–225). Table 8.3 presents several traits that are potentially visible archaeologically, which provide clues to changes in social organization that may have taken place in southern Epirus as a result of

contact with the Mycenaean world. Certainly, the current state of the Epirote data will not permit definitive conclusions about social and economic organization, but the recent work of the Nikopolis Project offers an opportunity to study with enhanced clarity the interactions of natives and Mycenaeans in and around the lower Acheron valley, the most important coastal zone of contact. Using the conceptual and archaeological framework developed above, I turn to the lower Acheron valley in an attempt to explain the changes seen in the valley during the LBA, to contrast those developments with other areas within Epirus, and ultimately to place the case of coastal Epirus in the broader context of Mycenaean interactions around the Mediterranean.

Evidence for Mycenaean Presence in and around the Lower Acheron Valley

It is clear from the material evidence alone that Mycenaean expansion took on diverse forms that varied in time, space, and scale (e.g., Kilian 1986, 1990). In the past, research has been primarily Myceno-centric, focusing on the ways that external trade functioned within the structural needs of the palace economies. For this reason, the most formidable obstacle to explaining the variability of Mycenaean presence (at least in areas outside the literate and well-documented lands of the eastern Mediterranean) has been the poor understanding we possess of indigenous societies. Recently more effort has been directed to illuminating Mycenaean contacts as interactive processes in which indigenous organization, priorities, and actions shape the nature of Mycenaean presence just as much as Mycenaean interests (e.g., Sherratt and Sherratt 1991; Tartaron 2001). From this perspective, indigenous communities are active participants that negotiate, resist, accommodate, capitulate, etc., rather than simply passive recipients of Mycenaean goods and/or acculturation. The province of Epirus is one of the most poorly known regions of the Mycenaean periphery, yet the lower Acheron valley provides a clear case of face-to-face contact between natives and Mycenaeans. The results of the Nikopolis Project's surface survey in the lower Acheron region augment decades of chance finds, and offer a first opportunity to apply systematically acquired evidence to shed light on the interactive process. In this section I first summarize the archaeological results, and then consider alternative models to explain the nature of Mycenaean involvement in coastal Epirus.

Mycenaean elements in the lower Acheron region

I have discussed above some long-known evidence for Mycenaean presence in the lower Acheron region at Kiperi and Ephrya. The small tholos tomb at Kiperi, on the Ionian coast approximately 15 km north of the Acheron mouth, is quite isolated on a steep hill at 150 masl. Apart from some architectural foundations and walls in the immediate vicinity of the tomb, there is as yet no LBA settlement known around the harbor below at modern Parga. The tomb

and the adjacent architectural elements are not conclusively associated chronologically, but the canonical cyclopean construction technique of a few wall segments supports an association. Archaeological survey accomplished with some difficulty in the heavily overgrown terraces around the tomb yielded dozens of sherds from handmade Bronze Age coarseware vessels, but no Mycenaean pottery. Some interesting observations about LBA Kiperi did emerge, however. The tholos tomb is remarkable for the skill evident in its construction, using precisely cut and tightly fitted sandstone blocks—unusual given its peripheral location and relatively early date in LH IIIA. The location of the settlement with which this tholos was associated remains unknown, as does any connection the Kiperi community might have had with Ephrya and other settlements at the Acheron mouth. But during our work there, we noted that looking south from a point near the tomb, the region of the Acheron mouth comes plainly into view, unimpeded if one were to clear vegetation from the hill's southern slope (Figure 4.20). The intervisibility of these two areas raises intriguing questions about possible links between the communities. They must have been aware of one another in the years corresponding to LH IIIA and IIIB at least, and continuous contact via land and sea, and even by other means such as fire or smoke signals, cannot be discounted.

In the lower Acheron valley proper, the Acheron River emptied into the Ionian Sea at the wide bay of Glykys Limin (Figure 7.6). A program of geological coring, supported by a series of radiocarbon dates, demonstrated that the Bronze Age bay extended up to 6 km or more inland from the Ionian coast (Besonen, Rapp, and Jing 2003; see Chapter 7). Other geomorphological findings furnish further details about environmental conditions in the Bronze Age. The profile of bedrock within the bay suggests that the gentle southern shore, particularly at Koumasaki and Spilaion, would have been ideal for pulling Bronze Age boats onto the beach from about three to five meters of water. The island of Ayia Eleni served as a natural breakwater, protecting the bay from waves and making it an ideal haven from storms and rough seas. The location of the settlement of Ephrya on the Xylokaastro hill makes perfect sense in light of the fact that it lay less than 500 meters from the shore, rather than several kilometers as is the case today. Further environmental data, moreover, establish the likelihood that the lower Acheron region was characterized by mild temperatures, high rainfall, perennial water courses, and copious springs in the Late Bronze Age. This information leads to two important conclusions: 1) Glykys Limin was ideally suited to maritime activity; and 2) the lower Acheron region was a favorable location for human habitation and subsistence.

The settlement within and outside the fortified acropolis of Ephrya was without question the central place that anchored the LBA settlement system, and the focal point of Mycenaean–native interaction. The three concentric fortification walls that enclosed the site may all date to LH III; the middle and lower walls certainly do. The outer wall

encloses 4.24 ha, and the Mycenaean inspiration for its cyclopean masonry and monumental south gate is clear.¹ The existence of multiple walls may reflect an expansion of settlement over time, though other interpretations, such as increased need for security, are also plausible. A remarkable result of 13 years of excavation is that the percentage of Mycenaean-style fineware may reach 10–15% of the total Bronze Age pottery assemblage, the balance comprised of local handmade ware of general Bronze Age type.² Unfortunately, the stratigraphy at Ephyra is very poor, with the result that little has been learned about the spatial, functional, and diachronic organization of the settlement in the Bronze Age.

Isolated finds of bronze weapons and scatters of pottery of Mycenaean type have been reported from other locations in the lower Acheron region (Andreou 1994: 242, figs. 27, 28; Dakaris 1963a, b; Soueref 1986: 58–68), but even with those additions, little was known about settlement and other uses of the landscape in the Late Bronze Age. Large tracts of the region had never been explored systematically; in particular, almost no information existed on indigenous settlements or subsistence activities. The survey produced 21 new Bronze Age loci, of which at least 10 preserve evidence of use in the Late Bronze Age. At five of these locations, remains of Mycenaean provenience or inspiration were found: two new examples of walls of Mycenaean type were recognized, and four sites yielded sherds from Mycenaean fineware vessels.

The most important new indications of Mycenaean material culture are two sites with walls of cyclopean masonry. At Ayia Eleni, two parallel walls were detected near the base of the hill, the lower of which could be traced for approximately 150 meters (Figure 4.3). Their construction typifies the cyclopean technique: large boulders, hammer dressed and stacked in irregular courses, with smaller stones inserted into the interstices for stability. The purpose of these walls is uncertain: they may have formed part of a system of agricultural terraces, or part of a fortification system that is now mostly lost. We may speculate with more confidence on the potential uses of the island of Ayia Eleni. Late Bronze Age activity there may be connected with an expansion into more marginal locations in times of economic prosperity (Kardulias, Gregory, and Sawmiller 1995), but more importantly, since the island nearly closed off the bay, the narrow northern and southern entrances from the sea could be easily monitored so that no waterborne traffic entered or exited undetected. Piratical raids from the sea may have been a recurrent danger to coastal settlements, particularly those in isolated locations (Stewart 1997).

Of similar interest is a walled settlement at Kastriza, a small hill just over five hectares in area, tucked away in the valley of the Vouvos River, a tributary of the Acheron. The walls and a gate at Kastriza show a similar use of cyclopean techniques, but on a more impressive scale and with a clearly defensive function (Figures 4.9–4.11). In this case,

the wall consists of outer and inner faces of large boulders, in places skillfully dressed, and a thick rubble core. The total thickness of the wall is approximately three meters, a figure that compares favorably with many examples of defensive wall construction at small sites elsewhere in the Mycenaean world (Hope Simpson 1981; Loader 1998: appendix 2). A few sherds from Mycenaean fineware vessels were found at the site among copious fragments of local pottery. Kastriza is intriguing for its powerful fortification and for its location. We may wonder if it was inhabited by Mycenaean, or perhaps by a local group with connections to Mycenaean living on the coast. The location of Kastriza, midway between Ephyra and Kiperi on a plausible inland route between the two sites, may also be significant. Was this overland route used in times of danger at sea? Or was Kastriza a node serving as an intermediary between Mycenaean on the coast and inland sources of supply?

Twenty-seven sherds from Mycenaean vessels were collected from the surface of the lower Acheron valley. Though the sherds are in a fragmentary condition, it appears that the assemblage conforms in chronological and formal terms to Mycenaean pottery already known from Epirus. The kylix is the most commonly identifiable shape, with fewer sherds belonging to stirrup jars, kraters, cups, and other shapes. The chronological range is also approximately the same as in the rest of Epirus: LH IIIA 1 or 2 to the end of the Bronze Age. The imported Mycenaean ware is of provincial manufacture, the most likely points of origin being Aitolokarnania and the Ionian Islands (Soueref 1986: 145–150).

Although local material was much more abundant than Mycenaean, interpreting the data for native settlement proved a difficult task. In the lower Acheron region, 21 new loci and almost 2,000 locally produced pottery sherds of Bronze Age date were discovered, but local artifacts are not particularly helpful in revealing chronology or change over time. At least until the Shaft Grave era, Epirus was intensely isolated from external contact by the Pindos mountains to the east, and the Ionian Sea to the west. One effect of this long isolation was extreme conservatism in material culture, making it difficult or impossible to develop relative chronologies based on stylistic or technological criteria. The forming, firing, and decoration of Epirote Bronze Age pottery changed little during the entirety of the Bronze Age, including the years of Mycenaean contact. Nevertheless, a clearer understanding of the indigenous society as the Mycenaean found it is essential to measuring any changes contact with the Mycenaean world induced. Before attempting to interpret the evidence from the lower Acheron region, however, it will be useful to consider a range of theoretical perspectives on cross-cultural interaction in the Bronze Age Mediterranean.

Models of Mycenaean Presence

Klaus Kilian offered a characteristically fascinating though controversial typology of Mycenaean contact scenarios

around the Mediterranean (Kilian 1986, 1988, 1990).³ He defined four contact zones outside the core area: the Mycenaean periphery, and zones of *expansive diffusion*, *limited diffusion*, and *free exchange pattern*. The Mycenaean periphery includes those areas well integrated into Mycenaean civilization as indicated by similar social, political, and economic structures. Among these are central places with dependent territories based on a hierarchy of agricultural settlements; a centralized economy of redistributive type, based on extensive agriculture and stock breeding with centralized storage and craft specialization; Mycenaean cult/religious practices; and specific architectural, tomb, and artifact types (Kilian 1990: 445–447). Coastal Thessaly and the inland Thessalian plains around Larisa and Pharsala—Feuer’s inner and outer border zones—are considered by Kilian to belong to the Mycenaean periphery. Kilian also included southern Epirus in the Mycenaean periphery, inexplicably in my view. He states that “...Epirus as far north as Ioannina may be assigned to the Mycenaean civilization from the beginning of the Late Bronze Age”; because of the high percentage of local handmade pottery, he identified the southern half of Epirus as a “border zone of the Mycenaean culture” (Kilian 1990: 447). But there is little evidence to justify any level of integration beyond what Kilian would call “limited diffusion” in early Mycenaean times, before LH IIIA, and no time at which Epirus ought to be “assigned to the Mycenaean civilization.” In Kilian’s figure entitled “Peripheral Mycenaean territories and their cultural radiation” (Kilian 1990: fig. 3) the entirety of southern Epirus is shaded as part of the “Mycenaean periphery.” I would argue that in relatively distant regions such as Epirus, the character of the Mycenaean periphery was *discontinuous* (Tartaron in press). Actual face-to-face contact between Mycenaean Greeks and local inhabitants was limited to narrow coastal strips where good harborage permitted easy, safe access by sea. Suitable harborage was relatively scarce on the rugged Epirote coast, with the result that these contact points were few and separated by considerable distances. These conditions had the effect of creating small pockets of coastal interaction, from which exchange networks extended inland along traditional routes of communication, typically the river valleys and other passes that cut through the mountainous interior. Along these routes, the distribution of Mycenaean-style objects is not continuous or contiguous, but instead arrayed in small focal clusters or in isolated occurrences. This distribution may be attributed to patchy archaeological coverage, or may reflect complex patterns of exchange and social interaction (see Renfrew 1975 for varied forms of trade and their archaeological signatures). Thus, Mycenaean materials are found in many and diverse settings, but even in southern Epirus, vast expanses remain empty of known Mycenaean artifacts, and it is difficult to speak of such areas as part of a Mycenaean periphery in any meaningful way. Further, the number of sites with Mycenaean material in the northern half of Epirus, particularly in the upper Thyamis (Kalamas) and Aoos valleys, is comparable to the number of sites south of the line that Kilian drew through Ioannina.

Regardless of the shortcomings of research coverage in Epirus, it is striking that so many elements of Mycenaean civilization are lacking. The pottery assemblage lacks many formal and functional classes, including kitchen ware and large storage pithoi of Aegean type; even transport containers such as alabastra and stirrup jars are rare. There are no figurines or other cult materials or spaces to indicate any penetration of Mycenaean religion. No chamber tombs are known; the local tradition of burial in cists persists throughout the Bronze Age, adapted in later stages to the northern tumulus form. The single tholos tomb at Kiperi is a unique occurrence in Epirus. It is possible that centralized storage or a Mycenaean-like site layout may have existed at Ephrya, but there is no evidence. I argue below, however, that there is some evidence for craft specialization and economic reorganization around the shores of the ancient Glykys Limin.

Free exchange pattern describes areas where Mycenaean material culture arrived indirectly and sporadically, analogous to Sherratt’s “margin.” Kilian cites the northern Balkans, central Europe, and limited areas of central and northern Italy as examples. These exchanges were sometimes initiated with border areas, but at more distant locations, down-the-line exchange moved material through areas entirely outside the Mycenaean world. Raw material and precious metals moved in the other direction toward the Mycenaean core.

Limited cultural diffusion is exemplified by Albania in the palatial period, when Mycenaean influence is limited mainly to type C and D swords distributed throughout the country. Mycenaean-style pottery is quite rare, as are other objects of Aegean type, and found only in southern Albania (Kilian 1990: 448; Bejko 2002b). Bejko (2002b: 14–15) concurs that this interaction represents a limited diffusion of Mycenaean objects, remarking that “...the exchange of Mycenaean goods was very selective and probably exclusively concentrated around the status symbol objects, like Mycenaean type swords.” Interior Anatolia also demonstrates limited diffusion of Mycenaean objects from the eastern Aegean coast (e.g., from settlements such as Miletos and Ephesos), which Kilian considers as a true Mycenaean territory. It is tempting to compare the Epirote hinterland with that of Anatolia, in that a similarly discontinuous pattern of findspots of Mycenaean objects prevails, and the mechanisms by which they found their way to the interior may have been comparable. Dodona, again, is the one case that seems not to fit this model of limited diffusion from the coast.

Expansive diffusion is for Kilian typified by the case of coastal and near-coastal central Macedonia (Kilian 1990: 451–455; Andreou and Kotsakis 1999), where “progressive stages of acculturation” occurred in the LBA. Kilian envisioned Mycenaean enclaves (“community colonies”; see below) at a few coastal sites like Torone and Ayios Mamas, which acted as nuclei from which Mycenaean influence radiated. Early contacts and the presence of Mycenaean burial practices at Torone, as well as

Mycenaean figurines at Ayios Mamas, persuaded Kilian that Mycenaean individuals resided in indigenous harbor settlements. The widespread diffusion of Mycenaean influence was seen in extensively excavated sites such as Assiros and Kastanas in the near hinterland of central Macedonia. Kilian noted many differences in the organization of these sites and that of the palatial polities, in the areas of architecture, burial practices, popular religion, elements of the ceramic repertoire, and others. But he emphasized the distinctive hierarchy of settlement and the centralization of storage of foodstuffs in large pithoi of Aegean type, which he interpreted as signs of limited, but significant Mycenaean impact on local social and economic organization. Subsequent excavation at Toumba Thessalonikis (Andreou and Kotsakis 1991, 1992, 1999), surface survey in the Langadas basin (Kotsakis and Andreou 1992; Andreou and Kotsakis 1994), and analysis of the finds from Assiros (Wardle 1980, 1993) and Kastanas (Hänsel 1989) suggest that these similarities to Mycenaean organizational forms are superficial, and indicate limited Mycenaean impact on local social, political, and economic organization. Andreou and Kotsakis (1999: 112–114) find that a settlement hierarchy developed over a long period of time in central Macedonia before contact with the Mycenaean world, and changed little during the period of contact. Furthermore, the centralization of production and storage at higher-level sites like Assiros served pressing needs for food supply for the community, rather than mobilization for the support of elite consumption and palatial workshops. Land use also took on a different form and scale: the archaeobotanical evidence from Assiros suggests intensive cultivation of a relatively limited amount of land in the immediate vicinity of the mound (Jones 1987; Halstead 1992b), unlike the extensive cultivation using draft animals implied for southern Greece by the Linear B and archaeological information. It appears, then, that long-established, everyday practices and social and economic structures remained firmly in place in central Macedonia throughout the period of contact with the Mycenaean core area.

Mycenaean Colonies

Actual Mycenaean colonies have been claimed for many coastal locations around the Mediterranean (Kilian 1990), yet the term is ambiguous and such entities must have taken on many forms in response to diverse purposes and local conditions. Colonization may involve both settlement and subjugation of local populations to foreign rule, or it may entail small enclaves within indigenous settlements, or something in between (Caskey 1969; Schofield 1984). Keith Branigan developed a typology of Minoan colonies, which, given the proximity in time and space, is also a useful first step in modeling Mycenaean colonization (Branigan 1981, 1984). His three types are the *governed colony*, *settlement colony*, and *community colony* (Branigan 1984: 49). The governed colony is a settlement of mainly indigenous people directly controlled and governed by a foreign power, through resident officials and garrisons from the governing polity. The settlement colony is founded and

established by an immigrant group, and is either self-governing or else is governed from the home polity from which the settlers came. In the community colony, a significant element of the population is comprised of immigrants, but the settlement is ruled by the indigenous population. By and large, the Minoan colonies—including Akrotiri, Phylakopi, and Ayia Irini—fell into the class of community colonies, although Kythera possessed the characteristics of a Minoan settlement colony (Branigan 1984: 49). Phylakopi was long considered what Branigan would call a governed colony, though more recently that arrangement has been questioned (Furumark 1950; Renfrew and Wagstaff 1982; Wagstaff and Cherry 1982; Branigan 1984: 51). Branigan's models address mainly the composition of the population and their political status, and his discussion centers on the presence or absence of Minoan forms in architecture, art, and artifacts as correlates of Minoan cultural practice. There is of course much more to the story, particularly in the economic realm (see particularly the extensive work on Uruk colonies of Syro-Mesopotamia: e.g., Algaze 1993, 2001; Stein 1999, 2002; Rothman 2001). Since the original motivation for much Mycenaean interaction with peripheral areas and beyond lay in the acquisition of materials unavailable in the core area, the aims and development of long-distance trade networks and the extent of engagement with local economies are fundamental aspects of our inquiry. The economic dimensions of Mycenaean colonization can be investigated using a different set of models that highlight the mechanisms and interactions by which goods and information move between societies that may have little in common. The archaeological and other evidence for indigenous economic organization before, during, and after the encounter with the Mycenaean world offers a window onto the nature of Mycenaean presence and the depth of Mycenaean influence.

Models of Mycenaean Overseas Trade: Ports of Trade and Conspicuous Consumption⁴

In a famous 1963 article, “Ports of Trade in Early Societies,” Karl Polanyi articulated the concept of the *port of trade* as a mechanism for cross-cultural exchange in pre-modern economies (Polanyi rejected the idea of pre-modern *market* economies) (Polanyi 1963).⁵ It was envisioned as nothing less than “...a universal institution of overseas trade preceding the establishment of international markets” (Polanyi 1963: 31). There is considerable controversy about Polanyi's substantive view of the economy, and many scholars of the ancient world have rejected or ignored the port of trade because of its association with one or more of Polanyi's strictures on markets, money, prices, and so forth (Sherratt and Sherratt 1991: 376; Sherratt 1994: 343; Figueira 1984; for an overview of the points of contention between adherents of substantive and formalist views as they relate to ancient economies, see Tartaron 2001: 3–9). It is virtually certain that rational economic behavior and what we would today recognize as market exchange driven by supply and demand were more widespread in the ancient world than Polanyi acknowledged. Nevertheless, the port

of trade retains an important utility in describing the locations and physical arrangements by which early cross-cultural trade could be realized.

For Polanyi, all trade was external in the sense that the purpose of trade was to acquire goods not available locally. He enumerated the ways in which goods may be acquired from a distance, including raiding, tribute, taxation, gift exchange, market trade, and politically administered trade (Dalton 1975: 104–109). The port of trade was the main institution of politically administered *foreign* trade (Polanyi 1975: 152). Polanyi and his colleagues believed that ports of trade emerged as mechanisms for the safe transfer of goods from one system to another, typically involving two societies with differently patterned economic institutions, and dissimilar customs for the exchange of gifts and commodities. These ports arose most often at coastal or riverine sites with extensive inlets or lagoons and easy overland connections, i.e., at nodal points articulating seaborne traders with producers and products of the hinterland, although inland sites at zones of ecological change (e.g., ancient Petra) could be considered quasi-ports of trade (Polanyi 1963: 31). The physical features of the port of trade included facilities for anchorage, debarkation, and storage and transshipment of goods.

Because of the security concerns and risks involved in trade, ports of trade may have developed as neutral sites, perhaps derived from the type of “silent” trade encountered in Herodotus⁶ and in many historical accounts (Smith 1987: 145–148). The neutrality of the port of trade preserved the security of the native communities, while also ensuring protection for foreign traders. The port of trade thus became a political and economic buffer zone between the foreign trader and the desired products of the hinterland (Humphreys 1978: 54). Because disputes may arise in any event, some form of judicial recourse was available on a permanent or ad hoc basis.

According to Polanyi, economic transactions at the port of trade were an extension of the administered economy, involving redistributive arrangements that structured and controlled the interactions of natives and foreigners. The political authority that administered the port determined the terms of trade by means of treaties that established set prices or ratios at which goods were to be exchanged, and through other administrative (i.e., nonmarket) measures. Trade was strictly controlled and confined to official channels, with the result that local staple exchange and long-distance trade remained completely separate. In such a system, competition was eschewed as a mode of transaction; as Polanyi maintains, competition was “...relegated to the background or was merely lurking on the periphery.”⁷

The port of trade was clearly conceived as a flexible institution meant to embrace a broad range of variability (Polanyi 1963: 31; Dalton 1978: 102–103). Polanyi and others described examples from several parts of the world, including Africa, Asia, the Near East, Indonesia, the

Mediterranean, and Mesoamerica (Arnold 1957; Chapman 1957; Revere 1957; Polanyi 1966; Austin and Vidal-Naquet 1977: 233–35; Leeds 1961; Geertz 1980). Polanyi made an initial attempt to classify ports of trade based on the locus of administrative control; according to this classification, ports could be organs of independent small states (Sidon, Tyre); possessions of hinterland empires (Whydah after 1727); neutralized by consensus of hinterland empires (Ugarit, Al-Mina), or by consensus of foreign trading powers (Whydah before 1727); or independent as a result of their own naval strength (Tyre) (Polanyi 1963: 33–38). Hodges (1978) proposed a four-fold classification of ports of trade for early medieval Europe, to which Torrence (1978) suggested further refinements. In the Mediterranean world, the most explicit applications of the port of trade concept have been to the Greek trading settlement at Naukratis and to the Phokaian colony of Emporion in Catalonia (Austin and Vidal-Naquet 1977: 66–68, 233–35; Möller 2001). But Polanyi’s broader paradigm of the economy has had wide influence among archaeologists and historians of ancient Greece, notably through the work of Moses Finley (1957a, 1957b, 1970, 1973, 1975, 1982; for an overview of the application of Polanyi’s ideas to ancient Greece, see Tandy and Neale 1994).

Maritime trade and the Mycenaean economy

The archaeological and textual evidence supports an interpretation of the palaces as redistributive (more precisely, mobilization) centers, though there is no universal agreement on the circumstances of their origin and development (Halstead 1988, 1999). The tablets document palatial control of substantial tracts of land and herds and their impressive productive capacity, and each stage of the redistributive process—the collection of goods, storage at the palaces, the allocation of resources to dependent workers, and the distribution of commodities—is represented in the Linear B records (Shelmerdine 1997: 567). The results of archaeological investigation at the palaces confirm this general picture: extensive workshops, archives, and storage facilities are regular features (e.g., Shelmerdine and Palaima 1984), and a system of roads radiating from the palace at Mycenae has been traced (Hope Simpson 1981: 11–17, 1998; Wells, Runnels, and Zangger 1990: 223–227; Lavery 1995; Jansen 1997).

Yet it remains extraordinary that within the entire Linear B corpus, few records imply the existence of external relations, and none refers to merchants of any kind. The well-known exceptions include lists of slave women from the coast of Asia Minor at Pylos, the names of exotic products such as sesame and ivory, and a tablet at Mycenae that mentions a transaction with Thebes (Cline 1994: 128–31; Killen 1985: 268; Chadwick 1976: 80–81). Nevertheless, the implication that one might draw from the Linear B archives that interregional exchange was an insignificant sector of the Mycenaean economy does not square well with the emerging archaeological record from around the Mediterranean. Durable Mycenaean imports,

chiefly fine pottery and bronze weapons and implements, continue to be found in the eastern and central Mediterranean. Mycenaean architecture, including tholos tombs and walls of cyclopean masonry, is found in many peripheral locations, and Mycenaean colonies, trade missions, or enclaves are proposed for the Aegean and Ionian islands, Asia Minor, and even Italy and Sardinia (e.g., Kilian 1990; Mee 1982: 81–92; Hope Simpson 1981: 155–59; Jones and Vagnetti 1991: 141). We must wonder if the distribution of extant objects betokens a much broader trade in goods that do not survive in the archaeological record. A partial answer comes from Bronze Age shipwrecks excavated by George Bass and his colleagues on Turkey's Aegean coast at Cape Gelidonya and Uluburun, which provide a glimpse of the breadth of material being transported around the Mediterranean (Bass 1991, with references; Knapp 1991). The Uluburun ship contained hundreds of ingots of copper, tin, and glass, along with pottery from Egypt, Cyprus, the Aegean, and Syro-Palestine, and numerous other objects that suggest elite gift exchange. The Gelidonya wreck contained mainly metal ingots and implements of a clearly less elite character. With the notable exception of the pottery, many of the items on the two shipwrecks would qualify as rare or unique finds in a terrestrial archaeological context: most ingots have long since been melted down or otherwise rendered unrecognizable, and among the rarities from the Uluburun wreck are ostrich eggshells, ivory, ebony, terebinth resin, and other organic remains (Knapp 1991; Haldane 1993).

The apparent contradiction between the textual and archaeological evidence has engendered a divergence of opinion regarding the scale of Late Bronze Age trade in the Mediterranean, with opposing camps that may be labeled “minimalist” and “maximalist,” corresponding to the primitivist and modernist points of view, respectively. The former group draws from the Polanyian tradition, through Moses Finley (1957a, 1957b, 1970, 1973, 1975, 1979, 1982), but is also influenced by the sentiment of Weber and Hasebroek that early societies were agrarian in orientation, and thus interregional trade was of little importance. This position has been outlined recently by Keith Hopkins, who emphasizes regional, agrarian self-sufficiency in the ancient world (Hopkins 1983). Anthony Snodgrass specifically doubts that *commercial* trade was consequential to the Bronze Age economy, but also maintains that a redistributive center would only send its ships abroad “...when it needs resources from overseas, and this may be very infrequently” (Snodgrass 1991: 18). John Chadwick finds it difficult to imagine private individuals trading independently in the Mycenaean system (Chadwick 1976: 156–58). For the minimalists, the archaeological record is best explained in terms of infrequent, directional elite gift exchange that has nothing to do with money, markets, or private enterprise.

The maximalist or modernist camp tends to view Bronze Age trade as extensive, driven by market forces, and involving a substantial contribution from private merchants. Bass argues that the shipwreck evidence supports a large,

but archaeologically invisible, trade in raw materials, which may help to solve the conundrum of the lack of Near Eastern objects in Aegean archaeological contexts (Bass 1997).⁸ He interprets the Gelidonya ship as a private Levantine merchant venture, and the commander of the Uluburun ship as either a wealthy private merchant or a royal emissary (Bass 1991: 75). The most thoroughly modernist position is advanced by Eric Cline, who portrays Mediterranean Bronze Age trade as primarily commercial, with gift exchange playing a comparatively small role. Further, he suggests that the scale of trade encompassing Egypt, the Near East, Italy, and the Aegean in the Late Bronze Age rivals that of today (Cline 1994: 106). Andrew and Susan Sherratt conclude that the Bronze Age economy was a market economy in the formal sense (Sherratt and Sherratt 1991: 376).

A compromise presents itself if the volume of trade is distinguished from its significance. Sherratt and Sherratt suggest that although the quantities of goods transported over long distances were small relative to total production, their importance should not be underestimated, for they represent the efforts of a minority to acquire goods possessing tremendous social significance (Sherratt and Sherratt 1991: 354). Mycenaean centers sought raw materials from which prestige items could be fashioned, either from established markets in the Eastern Mediterranean or from peripheral areas at lower levels of economic complexity. This demand on the part of elites for goods to further their social agendas forms an integral part of the Sherratts' conspicuous consumption model, to which I will return in some detail below.

Discussion: Glykys Limin as a Port of Trade

With these new data, it is possible to address essential but still unanswered questions. For example: What was the nature of Mycenaean interest in the lower Acheron valley, what forms did it take, and what sorts of interactions took place, where, and among whom? Some preliminary comments on the archaeological evidence will highlight several significant issues.

The discovery of Glykys Limin was surely occasioned by the expansion of Mycenaean activity to the north and northwest in the 17th–15th centuries, fueled by the demand for raw materials among an emerging elite. The broad bay would have been identified quickly as one of few good landfalls on the rugged Epirote coast. The incipient visits must have been to find shelter and fresh supplies of food and water, and probably left few, if any, tangible remains. Once maritime routes became more systematic in the 14th and 13th centuries, Glykys Limin offered an attractive node at which resupply and exchange could take place. In addition to a superb harbor, the lower Acheron region possessed an agreeable climate, in which water was abundant and crops familiar in the Mycenaean world could be grown. It was likely this combination of a favorable natural environment and obvious advantages for trade that enticed a community from the south to establish a small

settlement on the coast—indeed, to my mind there is little doubt that Mycenaeans were in residence in the lower Acheron region. The most compelling argument for this claim is the striking contrast between traditional Epirote material culture and the novel Mycenaean forms, particularly in the area of monumental architecture. There existed in Epirus no prior tradition of large-scale stone architecture, nor even any sign of significant cooperative building efforts (Papadopoulos 1990). One could argue for simple emulation on the basis of portable goods, such as fine pottery and metal objects, but it is difficult to sustain the notion that local chiefs had fortresses, terrace walls, and tholos tombs built for them, even invoking the importation of Mycenaean masons and engineers, without the slightest evidence of comparable traditions, functional equivalents, or sufficient social organization to mobilize the requisite labor. Fundamentally, the social and economic organization that arose around the shores of Glykys Limin in the Late Bronze Age had no indigenous antecedent, or any convincing trajectory toward it.

The surface survey results make it clear that the Mycenaeans did not encounter an empty landscape upon arriving in the lower Acheron region, however. An important revelation of surface survey was that Bronze Age sites tend to be buried at a depth of a meter or less. Many artifact scatters owe their detection to road building and bulldozing, and the implication that other shallowly buried sites of similar age await discovery is clear. Study of settlement data from the lower Acheron valley has led me to propose a Late Bronze Age site hierarchy with four tiers: *major settlement*; *village*; *farmstead or small rural residential compound*; and *non-residential special purpose site* (see Chapter 9 for full discussion). The survey evidence, supported by previous excavation data from settlements and burials, indicates a genuine population increase in LH IIIB, the time of greatest Mycenaean presence. At that time the highest, and probably the two highest, tiers of the settlement hierarchy were added, with the apparent complicity of Mycenaean interests.

The archaeological record from the shores of Glykys Limin is plausibly interpreted to indicate concentrated economic activity. In addition to the primary center at Ephyra, two other sites (Koumasaki and Spilaion) are among the largest surface scatters discovered by the survey, in terms of both artifact quantity and spatial extent. These sites are located on hills that slope gently to the southern shore of the bay, and each produced interesting artifact patterns that may shed light on the types of activities that took place there in the Late Bronze Age. At Spilaion, the pottery assemblage is weighted strongly toward medium to heavy storage vessels, raising the possibility of some sort of storage or warehousing operation. At Koumasaki, many thousands of flint flakes and abundant debitage, far in excess of the amount encountered on other surface sites, presumably belong to a Bronze Age flaked stone industry (Tartaron, Runnels, and Karimali 1999). The sheer volume of material suggests some occupation on an industrial scale. A credible

explanation is the processing of plants (a few sickle elements with silica gloss were found) for food or for construction material. But an alternative hypothesis is intriguing: the artifactual and environmental data may point to an industry for scraping and processing animal, probably cattle, hides. Bones of domesticated cattle are found in excavated contexts in Epirus from late Neolithic times (Douzougli and Zachos 1994: 17); Ephyra and the adjacent Nekyomanteion site have produced them alongside those of domesticated sheep and goat (Dakaris 1963a; Papadopoulos 1982, 1986a). Epirus was renowned in ancient literature for the size and quality of its cattle (Hesiod, fr. 349; Pindar, *Nemean* 4.52–54; Aristotle *Historia Animalium* 3.2.1). The flat, wetland terrain that surrounded Glykys Limin in the Bronze Age would have provided ideal grazing for large-bodied animals with prodigious water requirements.

Examples from the ethnographic record may illuminate the operation of such an industry. Richard Dana's account of two years aboard a merchant ship working the California coast in the 1830s provides a unique glimpse at the trade in cattle hides with Native Americans (Dana 1964).⁹ In several widely scattered passages, Dana describes the process by which the exchanges were effected: the Native Americans transported the hides, which had first been stretched and dried, by mule or cart to beaches where the merchant ships dropped anchor (Dana 1964: 92–93). On some occasions, the merchants' agent visited local Spanish missions to negotiate the purchase of large quantities of hides, which the Native Americans brought to the waiting ships (Dana 1964: 100). Because the hides were received in a rough, uncured state unsuitable for long voyages, the merchant crew was compelled to cure the hides by soaking, pickling, scraping, and cleaning them (Dana 1964: 153–154). Though Dana describes this process in some detail, he says little about the specific tools the curers used. We may turn, however, to ethnoarchaeological approaches to suggest the elements of a toolkit that may survive in the material record. A recent study of modern hide processing in Ethiopia assesses the archaeological implications of the manufacture, use, and discard of stone tools used in the curing process (Gallagher 1977). It is possible, therefore, to construct a model of a putative hide processing industry that takes into account spatial and artifactual attributes, and which can be tested against the archaeological record. The lithic assemblage from Koumasaki shares certain functional similarities with the Ethiopian assemblage, but further artifact study will be required to substantiate or reject this hypothesis. If such an industry did exist at Koumasaki, the scale of the remains implies craft specialization and surplus production for trade.

The question of interactions between Mycenaeans and natives might best be framed in terms of each group's priorities. A primary consideration for any group attempting to establish a foothold in foreign territory is security. The Mycenaean party was small in number and facing a variety of known and unknown dangers. Similarly, for the natives

it must have been intimidating to encounter a group with superior weaponry and technical skills. It is possible that some accommodation was reached before the settlers arrived (cf. Graham 1990). Evidence that there was a need, at least perceived, for defensive measures may be seen in the strong walls at Ephyra and Kastriza. Once security was addressed, the Mycenaeans presumably sought alliances to ensure a continuous flow of necessary goods and services: staple goods, including foodstuffs and pottery; a supply of labor for building projects, crafts, and industries; and access to existing exchange networks articulating the coast to the interior. Such alliances held advantages for natives as well. Far-reaching social and political opportunities attended the acquisition of superior technology and prestige items. The acquisition of metal weapons and implements and monumental architecture may have been particularly important, because they conferred not only prestige, but a competitive advantage in war and in subsistence productivity.

The initial social and economic transactions by which natives obtained exotic goods may have been gift exchanges intended to mobilize and cement these alliances. The relationships also provided scope for the emergence of elites from a probably tribal social organization. But what evidence is there for emergence of an elite and what effects did such a process have on social and economic organization? These questions may now be approached by placing the archaeological evidence within the theoretical framework of the port of trade. Many of the arrangements by which cross-cultural trade was accomplished in the lower Acheron region are admirably described by the port of trade model. In taking several components of the model in turn, I hope to demonstrate that something quite like a port of trade did exist around Glykys Limin in the Late Bronze Age.

A mechanism of cross-cultural trade

Archaeological study of the inhabitants of Bronze Age Epirus leaves no doubt that the Mycenaeans encountered local communities with differently patterned social and economic institutions. These differences are reflected in aspects of material culture ranging from architecture to pottery, and in varied attributes of settlement pattern and land use. There is no evidence that the Epirotes had anything resembling a price-making market economy, nor any sign of centralization of storage, population, or power. The encounter of these societies may be seen as part of a broader pattern in which growing economies send out trading missions to exploit the resources of surrounding areas at lower levels of economic organization (Sherratt and Sherratt 1991: 356).

Locational imperatives

Ephyra is situated at a suitable coastal landing point with easy access to the hinterland, a classic port-of-trade setting. The bay of Glykys Limin lay on a maritime route from western Greece to Italy and the Balkans that makes

archaeological and navigational sense (Hodge 1983). It was an optimal spot to seek shelter from rough seas, drop anchor, and find fresh water and food. The Acheron River system and the surrounding low-lying land extending inward from the coast permitted relatively easy access to the interior of the country.

The locations of settlements and other focal points of activity are also consistent with the port of trade model. Ephyra was founded on an easily defended hill a mere 500 meters from the shore of Glykys Limin. Koumasaki and Spilaion, if they indeed operated in concert with a Mycenaean trade mission, were situated directly on the shores of the bay, and signal the existence of functional specialization at certain sites, and craft specialists removed at least seasonally from subsistence pursuits. The fortified settlement at Kastriza, located in the floodplain of the Vouvos River valley just more than five kilometers from Ephyra, may have been a node articulating the coastal port to the products of the hinterland. The settlement was positioned at an entry point into the lowlands from passes between the mountains of Paramythia and Souli to the north, where pastoralists may have moved seasonally in upland pastures; thus, at a transition between contrasting ecological zones and their products. Ports of trade, once established, often build their own subsidiary networks of supply and communication nodes (Curtin 1984: 6–11).

Role as a buffering and segregating entity

The physical separation of the two societies is most clearly manifest in the defensive walls that enclosed Ephyra, Kastriza, and possibly Ayia Eleni and the putative settlement adjacent to the Kiperi tholos tomb. The risks perceived by both parties may be expressed in this monumental architecture, although we may speculate that crews of local laborers actually built the walls under the supervision of Mycenaean masons. Moreover, the circumscription of the Mycenaean community may be inferred from the limited coastal distribution of nonportable (i.e., architectural) elements of Mycenaean material culture. Ephyra in particular, and perhaps Glykys Limin as a whole, may be regarded as a buffer zone between the outward-focused activity in which Mycenaeans were engaged on the coast, and the native communities residing in the hinterland. The preponderance of indigenous artifacts (mainly pottery) at Ephyra raises legitimate questions about the ethnic composition of the settlement, questions that are beyond the capacity of the available data to answer. Despite my firm conviction that Ephyra was founded by Mycenaean colonists, there is no reason to dismiss the possibility of a mixed population (potentially including attached craftspersons or slaves, as one finds in the Linear B archives) or even the status of Glykys Limin as a neutral economic zone. Whereas neutrality was essential to Polanyi's definition of the port of trade, and some emphasize that attribute (e.g., Renfrew 1975: 42–43), others do not consider neutrality indispensable to the operation of a port of trade (e.g., Humphreys 1978: 55).

Administrative control

Outside of Ephyra, exotic or luxury items of Mycenaean type—imported pottery and bronze weapons and utilitarian objects—were deposited primarily in graves and hoards throughout Epirus, suggesting the circulation of such goods in a prestige sphere over which some measure of control was exercised. Obviously, luxury items lose their prestige if they are widely disseminated, and the restricted quantities and depositional contexts may reflect a deliberate strategy on the part of Mycenaean merchants and emerging local elites to maintain alliances through which the priorities discussed above might be pursued. The provisioning of everyday needs may have been effected in a parallel subsistence sphere; if both spheres did exist, local and foreign trade may have been kept largely separate.

In the port area, a certain level of control, or at least supervision, must be imputed to the Mycenaean community, notably in the mobilization of labor for commodity production and construction projects. In aboriginal subsistence economies, there is typically no labor available for the commodity market, with the result that colonizers must create this need (Gregory 1982: 118–29). One important aspect of the relationship between Mycenaean merchants and local elites may have involved arrangements for the release of persons to serve as craft specialists or laborers. The construction of the walls at Ephyra, Kastriza, and Ayia Eleni, and the tomb and wall at Kiperi, required the recruitment, by whatever means, of sizable crews of laborers under the direction of Mycenaean engineers and masons. Similarly, craftspeople for commodity production and personnel for the port facilities would have to be enlisted and supported.

Limitations of the model

The concept of the port of trade holds natural appeal for archaeologists and historians, because it offers a single, broad framework in which to evaluate data drawn from diverse examples of interregional and cross-cultural exchange. That is, within the single theoretical framework defined by Polanyi's substantivist economics (and the specific characteristics of the port of trade derived from it: Polanyi 1963), the port of trade model accommodates a wide variety of individual occurrences, from prehistory to modern times, reflecting diverse local conditions.

The analytical power of the port of trade model is limited, however, by its *static* (or *descriptive*) nature, an attribute acknowledged by Polanyi's apologists: "...neither formal economics (price theory) nor Polanyi's substantive economics provides a theory of change under aboriginal conditions. Both are concerned exclusively with static structure and performance...at specific...dates" (Dalton 1975: 75). This is a serious limitation, because a crucial aspect of any cross-cultural contact scenario is dynamic development over time, which may involve conflict, adjustment, and accommodation affecting all social and

cultural subsystems. From the archaeologist's point of view, theories of change are essential means of finding explanations for changes observed in the archaeological record. Changes in artifact assemblages and spatial patterning may denote population shifts, adjustments in subsistence and land use, redefined economic roles, the emergence of elites, or a host of other transformations potentially associated with the interactions taking place at a port of trade. Discontinuity and dynamic process characterize economic institutions and forms of economic integration over time, and for that reason it is easy to understand the doubt expressed by many observers that the Polanyian model can provide useful explanations of economic phenomena in the medium and long term. Therefore, whereas the port of trade has an important utility as a universal model of the locational, physical, and institutional arrangements of cross-cultural trade among nonmarket societies, if we wish to investigate the diachronic processes of interaction and their consequences, we must seek theories of change and dynamic models to complement it.

Dynamic Processes and the Role of Conspicuous Consumption

In spite of the insights it offers, the static port of trade model fails to explain the process by which Glykys Limin was transformed over time from a seafarer's refuge to a maritime trading center. The development of the port of trade at Glykys Limin depended on the interaction of a multiplicity of external and internal forces, among which might be mentioned demand on the part of local elites and their Mycenaean counterparts, the elaboration of trade relations with other areas of the central Mediterranean, navigational conditions, piracy, and the interactive processes of conflict, adjustment, and accommodation between foreigners and natives. A dynamic model is required, and one that is especially suitable to the conditions of Bronze Age Mediterranean trade is that of *conspicuous consumption*, recently elucidated by Sherratt and Sherratt (1991). The Sherratts' model is informed principally by Sombart's (1967) notion of conspicuous consumption as an explanation for the origins of capitalism, as well as a body of archaeological theory and fieldwork that examines the role of emulation in the emergence of complex societies under exogenous influence (Flannery 1968; Tourtellot and Sabloff 1972; Renfrew 1975: 33).

According to this model, conspicuous consumption on the part of emerging local elites may cause a transformation of local society by what the Sherratts call a "contagious process." In the first instance, foreign traders initiate gift exchanges with local leaders in order to mobilize desired products and the relationships necessary to ensure their uninterrupted flow. These leaders are recruited primarily to mobilize *commodity* production in what may be characterized as a non-commodity economy;¹⁰ the gifts they receive bestow both prestige and practical advantage, placing them in an improved position to enlist the necessary

labor and resources. Along with luxury items, the nascent elites acquire some of the values, and emulate some of the practices, of the foreign society. What begin as gifts may be transformed into commodities as demand and competition among emerging elites increase. But this demand may precede, or be “out of step” with, the local production of commodities for exchange. Elites face a double predicament: they are charged with furnishing goods and labor to fulfill obligations for gifts received, and simultaneously wish to satisfy their desire for practical and symbolic markers of personal power.

This dilemma may bring about a restructuring of the local economy to increase production of commodities (including labor power as a commodity: Gregory 1982: 116–162, esp. 118ff) that elites may exchange. The Sherratts envision a three-stage process (Sherratt and Sherratt 1991: 358): 1) initial provision of a few high-value, low-bulk manufactured goods (luxuries) to local leaders in exchange for high-value, low bulk raw materials (e.g., metals); 2) some transfer of lifestyle and technology to local elites, together with their participation in the form of high-value, low-bulk manufactured goods (e.g., leather goods); and 3) full linkage, involving the restructuring of agrarian production to provide bulk materials for local manufacturing processes, and full participation in complex bulk exchanges. The transition from the first to the second phase may involve a concentration of craft specialists without the mobilization of large rural surpluses. But the third phase can only be achieved through the restructuring of the economy to provide bulk raw materials for local manufacture, on a large scale, of commodities for exchange.

There is some evidence, though it is hardly conclusive, that such a transformation may have taken place in the lower Acheron region. The archaeological record from excavation and survey shows clearly that a suite of novel activities emerged in the latter stages of the Bronze Age from an essentially egalitarian subsistence-based society.

Taking first the evidence for Epirus as a whole, the deposition of luxury metals (bronze weapons, implements, and ornaments), and to a lesser extent ceramics, of Aegean type in hoards and burials indicates that consumption was limited to a minority that we may identify as elites. Epirus possesses a large quantity of bronze weapons relative to other regions on the periphery of the Mycenaean world, a remarkable fact that suggests that a high level of demand existed for these products. These observations point to the fulfillment of phases 1 and 2 of the Sherratts’ scheme, though we can only guess at the high-value, low-bulk raw materials or manufactured products that Epirote leaders offered in exchange.¹¹

The surface survey and landscape data are uniquely suited to address the attainment of the third phase, a restructuring of the economy for commodity production. The cyclopean walls noted at several sites and the tholos tomb at Kiperi indicate unambiguously the reallocation of workers away

from subsistence pursuits to corvée labor on a large scale. From the survey data, I have proposed a concentration of population and industrial activity around the shores of Glykys Limin, as well as expansion into previously marginal zones throughout the lower Acheron region. The voluminous remains of flint flakes and debitage at Koumasaki may represent large-scale production of a commodity such as cattle hides, and the sherd assemblage at Spilaion may mark the location of a storage or warehousing facility. Expansion into marginal zones may signal a effort to increase agricultural and pastoral production to supply food and raw material to the port of trade. If such interpretations are broadly valid (if not in every detail), they supply examples of a local transformation from a subsistence-based economy to one geared to commodity production, articulated directly to the Mycenaean trading settlement.

The conspicuous consumption model explains these changes in the archaeological record as correlates of an interactive sequence by which Epirotes and Mycenaeans accommodated one another, and ultimately, in a very limited coastal zone, achieved some measure of economic integration. An emphasis is placed upon the incentives of participants to engage in trade, and notably, on the social significance of trade. In the context of Mediterranean Bronze Age trade, exotic goods and technologies were desired for their ability to impart symbolic prestige or practical advantage, and were manipulated, hoarded, displayed, or dispatched to serve the desires of those who possessed them to constrain or mobilize social action. In the case of Mycenaean engagement in coastal Epirus, such exotic gifts may have set into motion a social and economic transformation, though this phenomenon did not long outlive the presence of Mycenaean merchants in the region.

I wish to emphasize that in my view these interactions were essentially symmetrical, because there were mutual disincentives to confrontation. The Mycenaeans possessed superior weaponry, technical skills, and organizational complexity, but at the same time were numerically inferior, isolated, and in need of subsistence and utilitarian goods to survive. I suspect that any attempt to subjugate the indigenous population by force would have met with fierce resistance, or more likely, the retreat of the population into the vast Epirote hinterland—in either case, there was no effective alternative to some form of accommodation. The strong walls at Ephyra may indicate a need for physical separation or a buffer zone, but cooperation with the native inhabitants is demonstrated in the ability to mobilize corvée labor and in the predominance of locally manufactured pottery and stone tools.

Conclusions: The Nature of Mycenaean Presence in Epirus

Reviewing the archaeological evidence in light of the theoretical frameworks examined above, it seems clear that the relationship between the Mycenaean core and the

northern Greek periphery was characteristic of core/periphery differentiation rather than core/periphery hierarchy, since direct political, economic, or ideological domination cannot be demonstrated in Macedonia or Epirus. *Contra* Kilian, I consider only small pockets of the Ionian coast around the lower Acheron valley to form part of the Mycenaean periphery, while the vastness of interior Epirus witnessed only a limited cultural diffusion. As a qualification to that statement, further exploration of the Ionian coast (as in the broad delta of the Thyamis [Kalamas] River) and of the Ambrakian Gulf (as at Skaphidaki) may yield previously unknown contact locales and scenarios. Further, I have emphasized that Dodona, with an unusual abundance of objects of Aegean type given its location, does not fit this model and deserves renewed attention.

The penetration of Mycenaean culture and influence was variable and in most areas rather superficial. In Epirus, bronze weapons and pottery shapes such as the kylix were embraced with some enthusiasm by privileged individuals, but the panoplies and pottery assemblages as they are expressed in graves and settlements betray little understanding of the Mycenaean way of battle or the ritual performance attached to drinking ceremonies or funerary feasts. Instead, the Epirotes seem to have adapted these exotic objects to their own practices and in so doing transformed their meaning. In Feuer's terminology, this borrowing of objects represents a superficial *cultural* integration into the Mycenaean world. The graves and important settlements that contain these objects may represent the wider phenomenon of social differentiation and an emerging warrior elite throughout Europe in the LBA (Harding 2000: 390–393). The presence of warrior graves is sometimes seen to reflect the strong role of warfare in the evolution of chiefdoms (Earle 1987: 297; LeBlanc 2001, 2003), but in Epirus, with few obvious signs of inter-societal stress or warfare, this phenomenon may be an infectious process of emulation, or a matter of intra-societal competition.

In the interior of Epirus, social differentiation may not have been stimulated directly by contact with Mycenaean material culture; rather, the objects of Aegean type were integrated as status markers in an ongoing social transformation. The lack of a strong correlation between distance from the coast and abundance of Mycenaean objects means that a kind of prestige-chain exchange (Renfrew 1975: 50–51) may have operated, characterized by limited access to prestige goods that are exchanged among notable persons through social mechanisms (Harding 2000: 188). This form of exchange may explain the spotty distribution of Mycenaean objects, their placement in burials, and the occurrence of anomalously large numbers of such objects at an inland site like Dodona.

Nevertheless, a more profound integration into the Mycenaean world, with a significant transformation of local social and economic organization, was possible at coastal points of face-to-face contact with Mycenaean immigrants. The lower Acheron valley furnishes an interesting case

study of these interactions and the changes they wrought. There, social organization before LH III can be characterized as tribal or segmentary. Excavation and surface survey document numerous, small sites with similar artifact assemblages indicating a modest population engaged in subsistence agriculture and pastoralism. In LH III, the arrival of a Mycenaean colony coincides with an increase in complexity that is seen in a host of novel forms of organization (Tables 8.4, 8.5). Although the period before LH III is poorly defined chronologically, there is a striking paucity of evidence for status differentiation, specialized production or consumption, or centralized organization of labor, storage, or administration (Table 8.3). During the period that the proposed Mycenaean colony existed (approximately LH IIIA2–LH IIIB2 or LH IIIC), centralization and status differentiation proliferated at Glykys Limin and the zone around it.

The increased complexity in the lower Acheron region represents the evolution of chiefdom-level organization, with intense economic interaction at Glykys Limin as the driving force. I envision Glykys Limin as a Mycenaean port of trade, though other terms such as “trading colony” or “trading mission” may serve as well. In my view, it was founded by immigrant (probably “provincial”) Mycenaeans with the primary aim of establishing a node and safe haven on the Adriatic trade route, or perhaps a dedicated port linking the Ionian Islands with the Epirote mainland. Intriguing questions of political control and ethnic composition at settlements in this coastal economic zone cannot at present be resolved. The tholos tomb at Kiperi highlights the ambiguity of identity: this elite tomb could be read as a sign of the penetration of Mycenaean beliefs and ritual practices among a native elite, but if the tomb was used by an immigrant Mycenaean family, it could reflect instead a territorial boundary and the segregation of the two populations. At Ephyra too the physical evidence is equivocal. The strong fortification walls suggest physical separation, but the predominance of indigenous pottery at the settlement attests a constant and vigorous interaction. Though much remains uncertain, the social and economic organization that evolved in LH III is especially impressive against the backdrop of the simple segmentary society from which it emerged.

The partial transformation of local social and economic systems set into motion by the presence of a Mycenaean installation in the lower Acheron valley is an excellent example of a medium-term conjuncture in *Annales* terminology. A novel demographic and economic cycle, lasting around two centuries, was superimposed on the equilibrium state of the *longue durée*. The structure of this cycle was enabling in terms of access to a wide range of exotic goods, and enhanced wealth and social status for some, but also constraining because many individuals and households surrendered a degree of economic and social autonomy. The survey data demonstrate that the traditions of the *longue durée* remained in operation, but for the settlements in the vicinity of the Bronze Age harbor, an external dynamic of interregional trade governed patterns

MYCENAEAN PRESENCE IN SOUTHWESTERN EPIRUS

Table 8.4 Organizational patterns in the lower Acheron valley before LH III.*

<i>Trait</i>	<i>Pattern</i>
Settlement pattern	Units of similar size and undifferentiated material assemblages
Architecture	No architecture of durable materials known; elsewhere in Epirus, no stone architecture at a scale above the individual dwelling (e.g., Thesprotiko)
Centralized labor organization	No known communal-scale labor projects
Surplus production	Not known
Storage	No centralized storage facilities known
Specialization	Household mode of production inferred from ceramics (see Chapter 5)
Rank	None known; elsewhere in Epirus, burials rare, but exhibit modest or no rank differentiation in grave goods
Status goods	None known; at Skaphidaki, a cist grave probably of the Shaft Grave era (MH III–LH I/II) contained two bronze pins possibly of early Mycenaean type, eight bronze rings, and assorted pottery vessels and other bronze objects. These may be incipient status goods
Regional trade	Indigenous artifacts not distinctive enough to reconstruct regional trade
Interregional trade	Influence of pseudo-Minyan pottery from southern Albania, but widely distributed among populace
Boundaries	No sign of physical boundaries, defensive features, etc.
Stress	No sign of resource or demographic stress

* See Table 8.3 for archaeological correlates of tribes and chiefdoms.

Table 8.5 Organizational patterns in the lower Acheron valley during LH III.*

<i>Trait</i>	<i>Pattern</i>
Settlement pattern	Three to four levels in site hierarchy, including a distinct central place (Ephyra); see Chapter 9 for details
Architecture	Residential architecture not yet excavated
Centralized labor organization	Numerous projects requiring corvée labor: Kiperi tholos tomb; walls at Ephrya, Kiperi, Ayia Eleni, Kastriza; tumuli at Ephrya
Surplus production	Possible expansion into new productive areas; surplus production possibly implied in evidence for large-scale production at Koumasaki (thousands of flint flakes)
Storage	No centralized storage facilities known, but pottery assemblage from Spilaion suggests storage or warehousing area. Further data from Ephrya awaited.
Specialization	Koumasaki lithic assemblage suggests industrial-scale, specialized production, perhaps of hides. Somewhere in Epirus (possibly near Dodona?) specialized production of bronze weapons of hybrid Aegean/northern type
Rank	Clear evidence of rank in elite tholos tomb at Kiperi, in tumuli at Ephrya. Concentration of Aegean bronzes in burials, concentration of Mycenaean pottery in burials and at the regional center (Ephrya), rare in the valley elsewhere. Site hierarchy ranked by size and other attributes (see Chapter 9)
Status goods	Aegean bronze weapons and implements (Kiperi, Ephrya), Mycenaean pottery
Regional trade	Movement of Aegean goods inland; possibly subsistence goods moving to Glykys Limin for export or to support elite and craft specialists
Interregional trade	Mycenaean objects and influences from Aitolia and the Ionian Islands; possible return movement of bronze weapons, coarse utilitarian pottery. Northern influences from southern Albania in metalworking
Boundaries	Clear boundaries and defensive features: possible temenos surrounding Kiperi tholos tomb; defensive walls at Ephrya, Kastriza, possibly Ayia Eleni
Stress	Warrior graves throughout Epirus, suggesting warrior elite; defensive architecture

* See Table 8.3 for archaeological correlates of tribes and chiefdoms.

of site size, location, and function in place of timeless, seasonal rhythms of subsistence within this generous ecosystem.

The interpretations offered here should be viewed with appropriate caution. The chronology of excavated and surface sites in Epirus remains problematic, and many aspects of the Bronze Age, such as the structure of domestic life, are simply blank. Until well-stratified Bronze Age sites are identified, excavated, and published, many of our interpretations must remain provisional. Nevertheless, the integration of the static port of trade model with the dynamic concept of conspicuous consumption provides a framework in which the phenomenon of Mycenaean engagement among peripheral societies may be fruitfully studied. Independently, neither is able to provide a complete picture, nor to make full use of the archaeological record. The port of trade model elucidates spatial and structural attributes, while the conspicuous consumption model highlights the interactive and processual. The application of such a framework to better-documented territories of the periphery of the Mycenaean world may yield especially interesting results.

Almost 20 years ago, Kostas Soueref (1986: 168–172) perceived the general outlines of the encounter with Mycenaeans at the Ionian coast with much insight, particularly given the meager data at his disposal. Briefly, he argued that Ephyra and Kiperi represent “organized territorial units of Mycenaean type.” Around a maritime station at Ephyra, there arose a social, political, and economic symbiosis between Mycenaeans and the local population. A link to markets and products of the interior was provided by seasonally migrating pastoralists. Along those ancient paths flowed goods such as timber, pitch, and pastoral products, which were exchanged for prestige items, particularly metal and ceramic objects. The exotic goods that traveled inland were ultimately deposited in burials at Kalpaki, Mazarakı, and Elaphotopos. Individuals and communities integrated into the coastal economic system came to depend on the port as a market for their surplus agricultural and pastoral products.

According to Soueref, distinct social classes emerged in response to economic intensification at the maritime station. A class of sailors, artisans, and laborers arose in support of the Mycenaean port. As full-time specialists engaged in non-subsistence occupations, they depended on the port for their livelihood, and on others for staple subsistence items. An “aristocratic” class of Mycenaeans and local elites controlling commercial activity at the port gained political ascendancy through their economic power, and by conspicuous consumption of exotic goods.

In basic outline, Soueref’s interpretations are not far from the conclusions I have reached after careful consideration of the newly acquired survey data, though I do not see the emergence of true social classes. The Nikopolis Project’s essential contribution has been, for the first time, to collect

data systematically, creating a local context for Mycenaean activity, and providing a means to measure the changes and effects brought about by the interaction between Mycenaeans and natives. The results offer sharper resolution and an opportunity for more sophisticated inferences based on specific archaeological and paleoenvironmental information. My own pleasant task has been to analyze and interpret the augmented evidence, in order to arrive, I hope, at explanations that possess greater clarity and detail, building upon the work of Soueref and others before him.

An important consideration of this chapter has been the degree of variability in the effects of Mycenaean presence around the periphery of the Mycenaean world. Adoption, non-adoption, adaptation, and “cultural drift” are all potential responses to Mycenaean cultural traits and technologies. Thus, Soueref’s “organized territorial units of Mycenaean type” take on one of many possible forms, or even several forms over time or across the lower Acheron region. The survey data permit greater resolution on chronological developments and on the range of settlements and other activity areas, which in turn illuminate the nature and degree of integration of the region into the Mycenaean enterprise in ways that were not possible previously. In the concluding chapter, I present a detailed analysis of the environmental and archaeological data for the lower Acheron valley throughout the Bronze Age. This exercise will illuminate the interplay of long- and medium-term forces, and further clarify the impact of the Mycenaean conjuncture.

Endnotes

1. Claire Loader (1998, 38) does not recognize Ephyra’s wall as a genuine example of Mycenaean cyclopean masonry, but her typology is too restrictive to allow for provincial variation in construction techniques that may respond in part to local circumstances. Moreover, although the masonry of the circuit wall does not fall into one of Loader’s canonical categories, the construction of the South Gate at Ephyra is strongly Mycenaean in character, and it is difficult to propose an alternative source of inspiration for it.
2. Kilian 1986: 284 n. 28 suggested the figure of 15%. Because the pottery from Ephyra has never been analyzed in a systematic way, this figure is nothing more than an educated guess. My own similarly unsystematic inspection of 43 excavation contexts produced an estimate of 8–13%.
3. Kilian’s imprecise use of terminology—or perhaps deficient translation of it—causes apparent internal contradictions that confuse and make it difficult to apply his models confidently.

4. Much of the discussion that follows on the port of trade and conspicuous consumption models is excerpted from Tartaron 2001.

5. Polanyi had earlier discussed the port of trade in 1957b: 262–63. See also Polanyi 1957a; 1966; 1975, 151–53. The port of trade model has been substantially developed and modified since Polanyi’s time: Humphreys 1978, 53–56; Dalton 1978; Möller 2001.

6. Herodotus 4.196. Polanyi (1963: 33–35) also discusses at some length Lehmann-Hartleben’s putative low-walled *emporía*—extramural meeting spots for traders usually sited on the coasts of rivers, lakes, or seas— in the prehistoric Mediterranean, for which the evidence is tenuous at best.

7. Polanyi 1963: 30. For a recent application of this idea, see Morris’s (1994) contention that profits and competition were marginalized in classical Athens. It is worthy of note, as this comment demonstrates, that Polanyi does not deny that competition and profit-making behavior existed in archaic economies; rather, he maintains that economic activity was managed predominantly by administrative action.

8. An important exception is the port of Kommos in southern Crete, which preserves a large quantity of objects imported from the Eastern Mediterranean in the 14th and 13th centuries B.C. (Cline 1994: 276–77, table 70; Knapp and Cherry 1994: 138–141; Rutter 1999). I am grateful to Jeremy Rutter for this reminder.

9. Many thanks to Curtis Runnels for calling my attention to Dana’s work.

10. Gregory (1982) would call this an “indigenous” or “gift” economy.

11. Soueref 1994: 404–407 provides a list of resources that merchants may have sought in Epirus. Apart from hides as suggested here, there is now the evidence of a Middle–Late Bronze Age amber-processing workshop in Pogoni in northern Epirus (Andreou and Andreou 1996). This exciting discovery may confirm a long-suspected amber route that passed through northwestern Greece from central Europe.

Chapter 9: The Survey Data in Context: The Lower Acheron Valley in the Bronze Age

The background to the study of the Bronze Age in southwestern Epirus has been set forth, and the data acquired in various components of the research have been presented. It is at last the time to put all of this information together to form a clearer picture of life in the lower Acheron drainage in the Bronze Age. Toward that end, the interpretations presented in this chapter are organized as a series of topics corresponding to the hypotheses outlined in Chapter 2: the opportunities offered and constraints imposed by the environment; subsistence strategies and land use; settlement patterns; and change-inducing impacts.

The Environment as an Enabling and Constraining Structure

In considering opportunities for subsistence and settlement, the capacity of a landscape to sustain diverse forms of life at different times of the year plays an essential role in determining whether human occupation will be episodic, seasonal, or permanent. Climate, soil, topography, altitude, and a host of other natural characteristics of a given landscape enabled inhabitants to pursue certain subsistence strategies successfully, while limiting their success in other pursuits. In much of the Mediterranean area, communities faced seasonal subsistence challenges, as in the summer, when water became scarce, the lush stands of wild grasses died under the hot sun, and competition for food and water with animals and other humans was keen. The responses to these environmental constraints were varied. In the more marginal, resource-poor locations, population density probably remained low throughout prehistory. Alternatively, ecological niches and local settings that could not easily sustain year-round settlement were often exploited on a seasonal or intermittent basis for specific resources. In the highly dissected topography of southern Greece, for example, a strategy of seasonal exploitation of diverse ecological niches in the plains, hills, mountains, and seacoasts could have been accomplished without the need for extreme long-distance migration. Another solution in ecologically diverse areas was a symbiosis among communities occupying different ecological niches, featuring local intensification in a narrow range of resources, from which the surplus could be exchanged for needed products. Groups facing resource shortages may have exchanged non-food items with nearby communities possessing surplus food, possibly according to “social storage” arrangements (O’Shea 1981). In the Middle Holocene in Greece, agro-pastoral technologies emerged to manipulate the life cycles of certain plants and animals, and to store surpluses to tide communities over in times of resource scarcity or failure. Domestication of sheep, goats, pigs, and cattle permitted the storage of resources “on the hoof.” In the event of resource failure, animals could be eaten. By the advent of the Bronze Age if not earlier,

domesticated animals were exploited routinely for their secondary products—milk, hair, skin, traction, etc. (Sherratt 1981, 1983; Pullen 1992). A range of plants, notably species of barley, wheat, and pulses, was found to be susceptible to human manipulation, and agriculture spread across Europe from western Asia. Storage of grain and seeds, while not always effective, helped to smooth out short-term food scarcity. In some locations, humans were able to overcome environmental constraints through the application of technology; elsewhere, their attempts ultimately failed.

The archaeological and paleoenvironmental data indicate that, until impact was felt from without in the latter stages of the Late Bronze Age, the relationship between mankind and the natural environment in the lower Acheron valley was characterized by a state of equilibrium or stability, similar to the normal condition of “stasis” in biological species proposed by the punctuated equilibrium model (see Chapter 2). The mild climate and perennial supply of water must at all periods have attracted humans and other animals to the lower Acheron valley, and enabled a high rate of subsistence success for a modest population. From recent paleoenvironmental studies, we learn that the climate of western Greece has not changed fundamentally in the last 5,000 years (Loy and Wright 1972: 37–40). Thus it might be expected that the basic components of climate—rainfall, wind, sunshine, temperature, seasons, etc.—had comparable effects in Bronze Age and modern contexts. We may assume that the climate of the lower Acheron region followed the Mediterranean pattern of cool, wet winters, and drier, warm summers. The Pindos mountains caused large quantities of rain to fall in western Epirus, making it wetter than southern Greece and most other locations in the Mediterranean basin (Table 7.2). The ample precipitation supplied abundant springs and the Vouvos, Kokytos, and Acheron rivers with large volumes of water, which were carried ultimately to the lower plain of the Acheron. Availability of fresh water in all seasons cannot be stressed too much: periodic, local drought has in the past presented severe problems for the maintenance of sedentary settlements in semiarid regions. Apart from sustaining a modest human population, fresh water from the rivers, springs, and wetlands must have attracted wild animals, provided sufficient watering for herds of domesticated animals, encouraged the growth of a lush flora, and allowed the cultivation of a wider variety of crops, including more demanding species, for a longer period of the year. A luxuriant growth of flora in the plain and on the elevations enclosing it was also promoted by the combination of rainy winters and warm, sunny summers. Such alterations as have been sustained by the landscape have been the work of two forces: the powerful fluvial hydrology that impelled the rivers to cut channels

and drop sediment loads on the plain and at their mouths, and the intervention of mankind.

The ecology of the lower Acheron valley favored the application of stable technologies over the long term to exploit an array of resources: gathering, agriculture, and animal husbandry interacted closely with the cycles of the natural world. Archaeological evidence from the lower Acheron valley and elsewhere in Epirus confirms that sheep, goats, pigs, and cattle were domesticated and exploited; their bones were deposited in domestic and burial contexts of the Bronze Age. Although the absolute and relative ubiquities of these species are unknown, the numbers of bones encountered were often substantial. Evidence for agriculture is indirect, and is often difficult to distinguish from evidence for harvesting wild plants. The main sources of information come from geomorphological observation of site contexts, and flaked-stone tools that may have been used in harvesting and processing crops. At one site in the lower Acheron valley, Vouvopotamos (Site N-13), abandonment of agricultural fields on the lowest contours of the slope overlooking the Acheron plain may have induced the loss of soil in sheet flows (see site entry, Chapter 4). Several flint sickle elements and flake tools with remnants of silica gloss found in the surface survey show that plants were actively harvested in the Bronze Age, although we do not know at present whether the tools were used to harvest wild plants or domesticated crops (or both). Cases of silica gloss were also noted in the finds from Dodona (Wardle 1972: 188) and Ephyra (my observation). Agriculture and animal husbandry ultimately became stable traditions of the *longue durée*, molding human–environment interactions, and shaping the economic and social structure of Bronze Age communities.

The persistence of stability in the lower Acheron valley was favored for yet another reason: the geographical isolation of the region until the Late Bronze Age. There is little indication before the Shaft Grave era of changes in material culture, of either exogenous or endogenous origin, as we have seen from examination of the ceramic, lithic, and metal evidence. The odd possible exceptions, such as the single obsidian blade fragment from Koulia Grove, only serve to underscore the fact that Epirus did not participate in interregional exchange networks before that time. The earliest substantial influence on Epirote material culture seems to have entered the country from the north in the latest stages of the Middle Helladic period, in the form of knowledge of dark-surfaced pottery in shapes imitative of Minyan ware. The impact of that phenomenon, to judge from the available evidence, was not great in southern Epirus, where such pottery forms a very small fraction of the total sherds collected in survey (Table 5.2). The lower Acheron drainage does not seem to have received a significant impetus for change until LH IIIA. Whereas Mycenaean pottery of LH I and LH II date is known in Italy, and a Vapheio cup of LH IIA type was recovered in a tumulus at Pazhok in Albania, the earliest Mycenaean

material in southwestern Epirus from a datable context belongs to LH IIIA.

Subsistence Strategies and Land Use

Notwithstanding the generous environment of the lower Acheron valley, the quest for subsistence could not be pursued indiscriminately, but instead followed seasonal cycles of resource availability, and variable distributions of resources across the landscape. Certain niches were suitable for exploitation at some times of the year and not others, and plants and animals yielded their products according to natural schedules over which limited control could be exerted. The success of subsistence depended on planning routine subsistence activities and providing for unforeseen events or crises, for example drought or disease. It may be presumed that the response involved a diversified strategy of seasonal, multiple resource acquisition to take advantage of cycles of growth and resource availability, and extensive mobility within the valley and its environs to exploit diverse, non-contiguous ecological niches. I propose here a hypothetical model of subsistence activities, their scheduling, and their implications for settlement systems which, I believe, conforms to the existing archaeological and paleoenvironmental data. The model comprises the following principal features.

1. Given local environmental conditions and the available subsistence technologies, the landscape had the potential to support year-round, sedentary occupation for a modest population of humans and their domestic animals. The resources necessary for survival—wild and domesticated plants and animals, water, clay, building material, and so forth—were available in and around the plain. The archaeological evidence suggests that human settlement actually existed at a level below the carrying capacity of the landscape for much of the Bronze Age, and only for the mature phases of the Late Bronze Age is it possible to imagine demographic stress on resources (see discussion of settlement patterns below).
2. A strategy of multiple resource exploitation was adopted, expressed in a schedule of subsistence that was both seasonal and extensive (Table 9.1). This suite of integrated strategies was necessitated by normal imbalances in resource availability across time and space. One component comprised traditional activities and their scheduling, which were passed down from generation to generation; i.e., the stable technologies of the *longue durée*; another consisted of responses to shorter-term phenomena, e.g., provision for counteracting adverse environmental events, storage arrangements, resource allocation to community members, etc. Flexibility must have been a necessary feature of the exploitive strategy.
3. The foundation of subsistence in the Bronze Age was a system of mixed farming and herding on small, possibly communal, holdings in close proximity to residences. Agriculture and animal husbandry were closely

THE LOWER ACHERON VALLEY IN THE BRONZE AGE

Table 9.1 Hypothetical seasonal resource acquisition schedule, lower Acheron valley.*

<i>Season</i>	<i>Activity/timing/location</i>
Spring	• milking: continues through spring • agriculture: wheat, barley harvest May–June • grazing: on spring growth, upland, foothills April–June • cull herds for meat • gathering: spring plants, foothills April–June • fishing: in sea; fish, shellfish in rivers and standing water on floodplain
Summer	• milking: ends in July • shearing: early summer • breeding: begins July or August • late crop: early summer on floodplain • grazing: cattle and sheep extensively on floodplain and field stubble; goats and pigs in upland zones • gathering: swamp, marsh vegetation • fishing: sea, rivers • hunting: late summer, near water sources
Fall	• agriculture: fertilize fields • agriculture: sow wheat on best fields, barley on other fields on lower slopes, northern (drier) portion of floodplain October–November • agriculture: harvest late crop, late fall • grazing: on trees, fruits, nuts in foothills, upland meadows • gathering: harvest wild resources: olives, grapes, etc., in foothills September–November
Winter	• lambing: December–January • milking: begins late February or early March • grazing: lower slopes, margins of floodplain • gathering: wild plants • fishing: sea, rivers • hunting: upland zones

* Based on archaeological and palaeoenvironmental results of the Nikopolis Project, and ethnographic data (see especially Campbell 1964; Aschenbrenner 1972; Chang and Tourtellotte 1993).

coordinated, and to some extent symbiotic. The plain of the Acheron and its tributaries, the low hills and slopes, and the adjacent uplands provided adequate land for farming and herding for the level of population indicated by the archaeological record, and thus there is no reason to suppose that long-distance pastoral transhumance was required at any time in the Bronze Age. Instead, the spatial patterning of subsistence was characterized by localized vertical and horizontal mobility

4. The collection of wild plants for food, fodder, construction material, and other purposes continued to be an important feature of subsistence throughout the Bronze Age. Luxuriant stands of trees, bushes, and wild grasses furnished a wide variety of useful products without the massive expenditures of labor required by domesticated species.

5. Hunting of medium- and large-sized animals diminished in importance in the Bronze Age, relative to the preceding Neolithic and Paleolithic periods. The domestication of

sheep, goats, pigs, and cattle provided the meat and other products that were acquired previously by hunting. Clearance of wooded and forested areas for farming, grazing, and building reduced the natural habitat of game species, driving them to more isolated locations at higher elevations as the resources of the lowlands were increasingly monopolized by humans and their domesticates. Certain wild species, for example wild boar and deer, were hunted in the Bronze Age, perhaps to supplement the diet or in times of resource stress. Small animals, including birds and fish, must have been sought regularly as dietary supplements. Fishing in particular may have been an important subsistence activity for those living around the wide bay on the Ionian coast, although almost no archaeological evidence, in the form of bones, hooks, or line weights, has been reported.

The application of a multiple resource acquisition strategy to the lower Acheron drainage can best be illustrated by a closer examination of the components enumerated above.

Agriculture

Neolithic agriculture is thought to have been based on dry (rain-fed) farming or on the use of spring-fed meadows (van Andel and Runnels 1987). The ground was tilled with the spade and hoe, until the use of the animal-drawn plow was introduced in the Early Bronze Age in Greece as part of the “secondary products revolution” (Sherratt 1981; Pullen 1992), which also featured a novel emphasis on utilizing the hair and milk of domesticated animals. (Several aspects of the model have been questioned, from the timing and suddenness of the “revolution” to its evolutionary implications: see Chang 1994: 356–358.) The recent discovery that many Neolithic agricultural settlements were built on the active floodplain of the Peneios River in Thessaly suggests that floodplain agriculture was also practiced from the outset in Greece (van Andel, Gallis, and Toufexis 1994; but see Halstead 2000: 117 for doubts). The idea that active floodplains had been cultivated received little consideration previously, because it was assumed that wet soils would issue poor yields, but apart from the archaeological evidence, recent botanical research proves that certain crops grown in prehistory, including einkorn wheat and barley, could prosper in fresh, moist silts (van Andel, Gallis, and Toufexis 1994: 140; Davies and Hillman 1988; Allen 2002).

There is a high probability that a combination of all these strategies was pursued successfully in the lower Acheron valley. Relatively heavy rainfall enabled dry farming to be feasible, although as everywhere rain-fed agriculture was vulnerable to short-term droughts and other aberrations. Crops sown on the hills and modest slopes at low elevations in the autumn would have returned a harvest in late spring or early summer. A more reliable harvest could be secured in spring-fed fields on the low slopes and margins of the plains, and perhaps in upland meadows as well. The hydrologic data show that the extent of meadows and bottom lands watered by springs may have been considerable (see Chapter 7). Moreover, the prospects for floodplain cultivation were more auspicious in the lower Acheron valley than on the Peneios floodplain. Many hills rising in the Acheron floodplain and the slopes on its periphery remained above the flood waters and thus could be occupied even during annual floods, unlike the low, artificial Thessalian magoules, which were inundated. The sites on the Thessalian plain were presumably occupied intermittently or seasonally (van Andel, Gallis, and Toufexis 1994: 141).

Agriculture in the lower Acheron drainage complemented animal husbandry and the collection of wild plants. Farming could be practiced in several niches or locations in and around the plain of the Acheron. The low hills and the gentler contours (slopes less than 10°: Wagstaff and Gamble 1982: 101) at low elevation were potentially ideal for rain- and spring-fed agriculture. The northern half of the plain, toward the villages of Potamia and Glyky, must always have remained drier than the terrain nearer to the river

mouth, as was the case in Leake’s time (1835 [IV]: 52), and as a result may have been available for cultivation. There is little information about the existence of upland pastures that may have been amenable to agriculture in the Bronze Age, although today springs flow at least in winter in the isolated limestone hills above the plain.

All of the basic crop species grown in the Mediterranean area in the Bronze Age could have been cultivated successfully in the lower Acheron drainage, but their use must remain speculative because flotation and other methods of plant recovery have not been practiced until recently (Zachos 1997). Analogy with other regions in Greece engenders the expectation that, at a minimum, barley, wheat, and various legumes were cultivated for human consumption and animal fodder. Recently, the data on early domestication of plants in Greece have been assessed, and the ubiquity and importance of the domesticates to human subsistence placed in proper perspective (Hansen 1988, 1994). Two varieties of wheat, emmer (*Triticum dicoccum*) and einkorn (*Triticum monococcum*), were primary domesticates in later prehistory. In the Bronze Age, emmer was by far the more common in southern Greece, but at several sites in northern Greece, einkorn was more ubiquitous (Hansen 1988: 43). Barley was an important crop throughout the Neolithic and Bronze Age; by the Early Bronze Age, six-row barley (*Hordeum vulgare*) had apparently superseded the two-row variety (*Hordeum distichum*), and is actually known from more sites than wheat in the Bronze Age (Hansen 1988: tab. 1). The main species of legumes, lentils (*Lens culinaris*), peas (*Pisum sativum*), and bitter vetch (*Vicia ervilia*), were native to the Aegean and are found at many sites. Legumes may have been more common at Bronze Age sites than previously thought (Sarpaki 1992), but in view of the modest quantities involved and the vagaries of differential preservation and recovery, it remains difficult to assess their “importance” in subsistence terms relative to other plant species (J. Hansen, personal communication 1996). Cultivation of the olive had been considered an important innovation of the Early Bronze Age (Renfrew 1972), but pollen and macrobotanical data from many parts of Greece now show that domestication probably did not take place until the end of the Bronze Age (Runnels and Hansen 1986; Wright 1972; Greig and Turner 1974). The presumed wild progenitor of the domesticated olive, *Olea europaea* var. *oleaster*, was a common constituent of the maquis plant community (Hansen 1988: 45). In the case of the grape, the wild (*Vitis silvestris*) and domesticated (*Vitis vinifera*) species were found to be mixed at Lerna (EH III: Hopf 1964) and Tiryns (Late Helladic: Kroll 1982a), while at Kastanas (Late Helladic: Kroll 1982b), the seeds were judged to have come primarily from domesticated specimens.

These observations provide a baseline for a hypothetical agricultural assemblage that will be confirmed or refuted only through the retention, analysis, and publication of plant remains. Both emmer and einkorn wheat may have

been cultivated, and perhaps wheat fields were planted in locations where the water supply was most reliable, i.e., in spring-fed plots on the low hills in the plain, on hillsides, and on the margins of the floodplain. Einkorn wheat may have prospered on the active floodplain if sowed after the retreat of the spring flood waters. It may have been discovered that six-row barley, a hardier and less demanding species than wheat, was suited to locations at which dry farming was required, as on some of the slopes and ridges hemming in the plain. If legumes were cultivated, perhaps peas, lentils, and bitter vetch were planted among the cereal crops, or grown in small household plots. They may not have formed a more substantial proportion of subsistence than wild plants. Olives and grapes may not have been introduced as domesticates to southern Epirus before the end of the Bronze Age, but wild species of both were likely gathered by humans and eaten by grazing animals.

Animal Husbandry

As we have seen, sheep, goats, pigs, and cattle are attested from burials and settlement debris in the lower Acheron region at Ephyra and the Nekyomanteion, as well as from most other Bronze Age sites in Epirus that have been extensively excavated. Because the excavation record is so spotty, and faunal assemblages have not been studied and published, it is not possible to judge the scale on which domesticated herds were kept, nor the relative proportion of each species. Any attempt to reconstruct livestock rearing practices in the lower Acheron valley must be hypothetical and must take into account a number of interrelated factors influencing domestication and exploitation strategies—among these the suitability of the environment to pastoral activity, the suitability of domesticated species to various ecological niches, and the place of livestock rearing in overall subsistence strategies.

Sheep graze primarily in open ranges in foothills and hilly regions. Because they are slow of foot, easily confined, and docile of nature, sheep were ideal in behavioral terms for domestication (Clutton-Brock 1981: 56). The storage of fat in sheep renders their meat more protein- and calorie-rich, and less sinewy and tough, than that of goats. Sheep also provide milk, hair, skins, and dung for fertilizer and other uses. They are best suited to grazing on the stubble of unused (fallow or harvested) agricultural fields, grasslands, and open woodland, such as would have been found in the plain and on cleared areas or relatively open oak woodland on the lower slopes of the lower Acheron valley.

Goats, by contrast, are browsers whose natural habitats are the rugged upland and mountain zones (Clutton-Brock 1981: 57–58). Their adaptation to harsh environments make them versatile feeders, and capable of surviving on a minimum of food in extreme environmental conditions. Goats furnish humans with many of their subsistence needs: hair and hides for clothing, meat, milk (which can be

converted to cheese and yogurt), dung, and other products of the carcass (sinew, tallow). In the lower Acheron region, goats may have been allowed to browse in upland zones that were not as well endowed with the grasses and softer foliage favored by other domesticates; such a strategy would also have conserved the lowland grazing for sheep and cattle. At the same time, the feeding habits of sheep and goats are complementary, and it is therefore common for the two species to be herded together, the goats browsing on thorny scrub vegetation while sheep feed on grasses. Many locations in the slopes overlooking the plain must have been fitting for herding sheep and goats together: cleared agricultural fields and pastures bordering on woodland, relatively open oak woodland with herbaceous undergrowth. Under conditions of relative vegetative abundance, as would have been expected at most seasons and in most years, the herding together of sheep and goats may have been the preferred strategy.

Cattle provide a wide range of useful products: meat, milk, hides, fat, and large quantities of manure, yet the cost of their maintenance in terms of food requirements and labor input is very high. It is possible to bring cattle to graze in upland areas (I have seen cattle grazing on the upper slopes at Turkovouni, the relatively steep hill that forms the eastern terminus of the Ayios Thomas peninsula on the Ambrakian Gulf), but it must have been more expedient to allow them to graze at low elevations in and around the plain. First, cattle are best suited to grazing on the grasses, reeds, and rushes that were found on the moist floodplains of the Acheron, Kokytos, and Vouvos rivers; the greatest concentration of cattle in southwestern Epirus today is found in the marshy plain of the Louros River near its mouth on the Ambrakian Gulf. Second, cattle have substantial water requirements that are easier to satisfy in locations with standing fresh water. Third, it may have been difficult to herd large-bodied cattle through dense oak forests of the type that probably existed above the plain in areas unaffected by human clearance. Finally, farmers would have desired to keep cattle close to agricultural fields in order not to lose a substantial proportion of the manure, and for use as draft animals. If human settlement and agricultural activity were focused on the plain and the foothills surrounding it, cattle must have been maintained in close proximity.

The last domesticated species that is mentioned at Epirote Bronze Age sites is the pig, *Sus domesticus*. Pigs are quite amenable in a behavioral sense to exploitation by humans (Clutton-Brock 1981: 73–76). They are versatile feeders, managing well by scavenging scraps left by humans. They also eat acorns and other fruits and nuts, and are well adapted to being run in dense forests of oaks, junipers, beeches, olives, and other trees, vines, and shrubs, as we know they were in Roman times (e.g., Columella VII.9.3–7). The feeding habits of pigs are easily accommodated to human behavioral patterns because unlike ruminants, which have short but continuous cycles of feeding and resting, pigs are able to feed for several hours and subsequently

rest for several hours, making it unnecessary to take them out to feed at night (Clutton-Brock 1981: 74). The lush forests of oak, arbutus, wild olive, and other trees and bushes that covered the slopes and uplands in the lower Acheron drainage in the Bronze Age, remnants of which survived to the time of Leake (1835 [IV]: 50; see Chapter 7), provided abundant fodder for pigs. Pigs supplied meat high in protein and calories, skin, fat, and dung.

The Articulation of Agriculture and Animal Husbandry

Much has been written about the ways in which agriculture and animal husbandry were incorporated into the overall subsistence schemes of prehistoric communities; an especially contentious issue has been the place of seasonal, long-distance transhumance in prehistoric economies (e.g., Halstead 1981, 1987, 1989; Lewthwaite 1981; Cherry 1988; Chang and Koster 1986; Chang and Tourtellotte 1993; Chang 1994; Geddes 1983; Greenfield 1988; Sherratt 1981, 1983). Historical, archaeological, and ethnographic data attest, however, to a broad continuum of adaptations ranging from purely nomadic pastoral transhumance to purely sedentary cultivation of plant domesticates, with endless variations in between.

Diverse adaptations along this continuum are evident in early modern and modern Greece. Purely nomadic or seasonally (long-distance) transhumant pastoralists are traditionally represented by the Sarakatsani, a people of uncertain origin whose way of life is documented since the 14th or 15th century, and probably extends much earlier (Fermor 1983: 27–33). Before the 20th century, the Sarakatsani roamed from the Black Sea to the Adriatic Sea, spending summers in high mountain fastnesses and winters in the plains on the fringes of settled societies. The semi-nomadic to sedentary Vlachs and Karagounis differed fundamentally from the Sarakatsani in that they possessed permanent mountain villages, from which the male population migrated seasonally in search of lowland winter pasture, and to which they returned in the spring. The Vlach village economy depended almost solely on livestock (Fermor 1983: 29). Yet even this dichotomy breaks down, as there were some Koutsovlachs and Albanian Vlachs, who, while distinct culturally and linguistically from one another and from the Sarakatsani, pursued a transhumant existence “identical in its general outline with that of the Sarakatsani” (Campbell 1964: 2). Among modern Greek villagers, all these groups were commonly referred to simply as “Vlachs” (Campbell 1964: 1).

A less intensive form of seasonal, long-distance transhumance was common until recently in Greece, as exemplified by pastoralists in the rugged Aitolian highlands in the period before World War II (Doorn and Bommeljé 1991). These village economies were based on agriculture, and the seasonal transhumance that did occur was driven by economic necessity—the frequent inability to raise enough crops to feed both humans and animals year-round—rather than environmental necessity or timeless

cultural traditions. In these circumstances, long-distance transhumance was not practiced by all communities, or by all families within a community, or even in all years (Doorn and Bommeljé 1991: 88–92). Shepherds in Aitolia were also farmers, and they generally preferred not to be transhumant. A common feature of societies practicing long-distance transhumance is the intimate connection with, and dependence upon, their own agricultural production or external farming communities to which they trade pastoral products for needed agricultural foodstuffs and other items. Furthermore, geopolitical considerations have always been vital to the existence and survival of long-distance transhumance. When lowland communities choose to plant on winter pastures or otherwise deny access to them, transhumance may collapse or be pushed farther and farther afield. The extension of transhumance over vast distances, on the Sarakatsani model, may rely on favorable political conditions. The Ottoman period was ideal for very long-distance migration, with a vast swath of southern Europe and western Asia under nominal Ottoman control, but the creation of several Balkan states, and the conflicts between them, in the first half of the 20th century, ultimately placed limits on the wanderings of the Sarakatsani and other transhumant pastoralists. For demographic and geopolitical reasons, then, long-distance transhumance is not likely to be a stable adaptation or an adequate solution to subsistence challenges in the long term (Doorn and Bommeljé 1991: 92).

Closer to sedentary agriculture lies a localized mobility model in which agricultural communities practice short-distance, vertical and horizontal movement to take advantage of relatively abundant resources close at hand. This mobility manipulates seasonally available resources, as well as distinct ecological niches that yield a range of products. Such an adaptation would be common in diverse, fertile ecosystems where lowland plains or elevated basins are juxtaposed with hilly slopes and mountains, as in the lower Acheron valley and many other settings in Greece. Here we can meaningfully distinguish mobility from long-distance transhumance. I find it uncontroversial that mobility is a perennial and essential feature of adaptation to Greek landscapes (e.g., Green 1997: 648–649), which present a mosaic of horizontally and vertically differentiated resources. A reasonable response to the seasonal and spatial aspects of such landscapes is a mobile and scheduled subsistence scheme, as I have emphasized above. But mobility need not imply long-distance migration of any kind. One of the recurrent problems in debating Bronze Age subsistence in Epirus is the confusion caused by focusing on the extremes of the continuum to the exclusion of intermediate adaptations. Halstead (1987) presented two alternative visions of the integration of herding and cultivation in prehistoric Greece, which come close to the opposite endpoints on the continuum: 1) a system of long-distance pastoral transhumance divorced from the farming sector, in which herders alternate between summer pastures in the mountains and winter pastures in the lowlands; and 2) a mixed farming and herding strategy

in which livestock are maintained in close proximity to settlements and agricultural fields (see also Cherry 1988; Chang 1994). Subsequently, much commentary focused on these strategies as mutually exclusive and theoretically irreconcilable, and much ink was expended in attempting to support one while debunking the other. Recently, more nuanced and complex readings of the archaeological and ethnographic record show that not only intermediate strategies, but multiple strategies may exist in a given region and time. In a study of modern pastoralists in the Pindos mountains of western Macedonia, a continuum of farming/herding strategies was detected in three elevational zones (Chang and Tourtellotte 1993; Chang 1994: 362–364), and the study cited above of Aitolian mountain communities reveals the complexity and mutability of decision-making as influenced by a host of internal and external pressures (Doorn and Bommeljé 1991).

The question of long-distance transhumance in Epirote prehistory has long been influenced by the notions that: 1) communities of the mountainous hinterland were compelled by the harsh climate and seasonal growth cycles to practice a summer-in-the-mountains, winter-in-the-plains transhumance; 2) long-distance transhumance is a rational outcome of taking best advantage of diversity in climate, topography, and resources; and 3) the Sarakatsani are a close analogy, in social and economic terms, for the prehistoric communities of the Epirote hinterland (e.g., Dakaris 1972a: 25–26; Hammond 1967: 296–299; Vokotopoulou 1986: 374). Although long-distance transhumance is often proposed as a feature of Bronze Age economies in the Old World (e.g., Watrous 1977; Greenfield 1988), this position has been challenged vigorously (e.g., Lewthwaite 1981; Halstead 1987; Cherry 1988). Those who favor a significant role for long-distance transhumance view it as an efficient means of adapting to seasonal climatic variation, which can be marked, and of smoothing out fluctuations in the availability of grazing and other resources in a dissected landscape of mountains and lowlands. In more extreme formulations, it is argued that human communities were constrained to a schedule of seasonal migration by the poor quality of soils, seasonal resource depletion, or climatic extremes. Thus, transhumant pastoralism divorced from the arable sector was an environmentally determined feature of Bronze Age societies.

Apart from recoiling in horror at expressions of environmental determinism, those who doubt the existence of prehistoric, long-distance transhumance tend to view it as a specialized strategy that depends on the existence of specific economic, political, and social conditions, most essentially that: 1) extensive upland pastures were available; 2) large herds of domesticated animals existed; 3) social structures were in place to maintain these herds and organize their seasonal movements; and 4) there was some economic advantage in large-scale pastoral systems involving movement over long distances from upland to lowland zones. Stated another way, the practice of

transhumant pastoralism divorced from the arable sector must be placed in a social, political, and economic context corresponding to prehistoric realities; as Claudia Chang (1994: 357) states, “...animal husbandry must be examined in prehistoric contexts in terms of its economic, social, and political advantages, and not merely as a form of ecological adaptation to the variable landscapes of mountainous and lowland regions of Greece.”

The success of long-distance, seasonal transhumance depends on the availability of extensive upland pastures, yet the existence of open grasslands in upland zones in the Bronze Age has not been demonstrated (Bottema 1974; Halstead 1987: 79–80; Cherry 1988: 15). The pollen evidence, on regional scales, favors heavily forested hills and mountains, although the data remain in many respects equivocal. Sufficient evidence for localized forest clearance around the Balkans appears from ca. 5,000 BP, but even though human agency is suspected, it is not clear whether this activity was connected only with agricultural pursuits or with pastoralism as well (Willis 1992c; Bottema 1994: 57–58). The results from pollen cores at Gramousti and Rezina in the interior of Epirus, separated by 15 km but 1400 meters of elevation, have been interpreted as showing forest clearance by transhumant pastoralists roughly between 6500 and 6000 BP (ca. 5500–5000 B.C.), but the data are equivocal and this would be a case of short-distance transhumance (Willis 1997; see Chapter 7). The cause-and-effect relationships between humans and vegetational change in prehistoric times are not yet reliably known (Halstead 2000: 119–121), and some believe that extensive, deliberate clearance of upland forests to create pasture land may be a phenomenon of the last several centuries (Cherry 1988: 15; Bottema 1974; McNeill 1992; but cf. Willis 1997: 410). If extensive mountain pasture did not exist in Bronze Age Epirus, it would have been difficult to move large herds over densely wooded terrain.

The size of herds and the scale of pastoral transhumance in the Bronze Age are important considerations. Long-distance transhumance may imply large flocks, possibly owned or maintained by the community or other powerful political or economic institutions. Individual households would scarcely have had the means or incentives to practice long-distance migrations with small herds. From an economic point of view, the removal of the human labor required to drive the herd, and the loss of primary and secondary products (meat, milk, manure, hair, hides, etc.) during the absence from the lowland village, make little sense for households or even groups of households operating on a modest scale. Other concerns, such as the safety of the migrating group from human and animal predators (Green 1997: 648), also militated against small-scale, long-distance transhumance. Instead, some overarching communal entity was required to make seasonal transhumance viable, safe, and economically profitable. Interestingly, although seasonal transhumance in Aitolia for the period between 1930 and 1940 typically involved several hundred thousand animals, economic

necessity at the scale of families or parts of communities, rather than powerful institutions, seems to have been the driving force.

On the size of Bronze Age herds, there is limited faunal evidence (Payne 1985; Halstead 1989). Although some sites have yielded bone specimens in the thousands for a given species, the minimum number of individuals (MNI) tends to be rather low (usually fewer than 100), and it is difficult to arrive at a median or maximum number of individuals represented (Payne 1985: tabs. 1–3). In the Neolithic villages of the Thessalian plain, the faunal data suggest that livestock were kept in small numbers (fewer than 50 head) by households, and played a subsidiary role to cereal and pulse cultivation in overall subsistence (Halstead 1989: 70). These assemblages are dominated by sheep, which are best suited to grazing and manuring on cultivated land (Halstead 2000: 121). Later, population growth and changes in the social context of production in Late Neolithic and Bronze Age Thessaly weakened the economic independence of households, favoring the emergence of communal elites with control over surplus production (Halstead 1989: 75–77). A more balanced mixture of sheep, pigs, and cattle implies a more extensive exploitation of contrasting lowland and upland resources (Halstead 2000: 121). One result of the reordering of the economy may have been a shift from household to communal herding (Halstead 1989: 77), and in this development it may be possible to discern a feasible, if incipient, sociopolitical foundation for seasonal transhumance. Evidence that the maintenance of very large herds did in fact arise in the context of (partially) politically managed economies comes from the Linear B archive at Knossos. Records of palace herds numbering up to 100,000 head (Killen 1984: 49) imply palatial control over vast tracts of pasture land, and over the productive labor of many individuals. Production targets are specified for wool, which was sent to workshops engaged in a large-scale textile industry. The finished textiles were received by the palace, and perhaps served as commodities to be traded along with perfumed olive oil (Haskell 1984) and other products.

According to Cherry (1988: 25), it is only with the emergence of the palatial economies that specialized, large-scale pastoralism could have existed, and thus unique conditions under which long-distance transhumance made sense in political, social, and economic terms. This was the earliest moment at which the necessary conditions and incentives for this form of specialized pastoralism were satisfied: control over economic organization and production by an overarching entity, the demonstrable existence of large flocks, and economic advantage in the form of surplus that could be transformed into profit from exchange. Whether specialized transhumance was in fact practiced by Mycenaean states is unknown. Observers often point to Medieval systems of long-distance transhumance in Italy (the “Dogana”) and Spain (the “Mesta”), sponsored by the state to supply the lucrative wool trade, as examples

of optimal circumstances under which transhumance flourished, and to suggest that such circumstances are not clearly demonstrated in earlier periods (Lewthwaite 1981; Halstead 1987: 80; Cherry 1988: 14–15; Chang and Tourtellotte 1993: 252). Profit as a motive for the intentional clearance of extensive upland pastures is a notable feature of the Medieval wool industries, along with technologies for forest clearance well beyond the capability of Bronze Age communities. It is unlikely that Bronze Age societies in Greece possessed the tools, labor, or economic incentive to open areas of upland pasture land on this scale.

A final point of contention is the use of ethnographic analogy to portray the character of Bronze Age pastoralists. Convenient models were found among groups practicing long-distance transhumance in the modern era in Greece, particularly the Sarakatsani (Wace and Thompson 1914; Campbell 1964; Fermor 1983; Kouremenos 1984; Chang and Tourtellotte 1993). For reasons of the fundamental ecological, sociopolitical, and economic changes that have taken place since later prehistory, attempts to project the Sarakatsani model directly onto the Bronze Age are widely seen as theoretically flawed. Chang (1994: 354–355) expresses doubts about such uses of ethnographic data, suggesting that ethnographic and ethnoarchaeological data from modern pastoral societies be used instead as comparative material to study similarities and contrasts with their ancient counterparts, and to identify patterns from which pastoral activity might be identified in the archaeological record. Furthermore, as we have seen, the Sarakatsani way of life is merely the most extreme of many possible agro-pastoral strategies, and its existence depended on a probably rare convergence of economic, social, and political conditions.

Mixed farming and herding

Halstead’s alternative to the separation of herding from the arable sector in seasonal migrations to upland pasture is a system of mixed farming and herding, based on the evidence of early farming villages in central and northern Greece. In this formulation, households engaged in intensive management of small arable plots near their residences, and grazed their own small herds on fallow weeds, stubble, and vegetation on surrounding land. From the admittedly sparse but converging information, it appears that early Neolithic settlements were concentrated in the well-wooded lowlands, a setting that would have made large-scale herding of any type difficult (Halstead 1981: 314). The archaeological remains indicate that farming, rather than livestock rearing, formed the basis of the subsistence economy (Halstead 1989: 70). In the earliest villages, sheep were the primary domesticated animals; their adaptation to open grasslands perhaps underscores the intimate association of farming and pastoralism in clearings in a heavily wooded environment. By the Late Neolithic, however, the proportions of goats, cattle, and pigs had all increased at the expense of sheep, a sign that economic activity had expanded to the wooded areas, and

that land clearance had progressed substantially. The emphasis on exploitation of livestock for meat that is suggested by the mortality patterns of the early phases of the Neolithic period (Halstead 1989: 70) is possibly replaced by a strategy making fuller use of secondary products by the beginning of the Bronze Age or slightly earlier (Sherratt 1981). From this information, we may speculate that livestock reared by early farming households served several purposes: 1) as a source of nourishment, initially in the form of meat, and later also for secondary products; 2) to clean (by grazing on weeds and stubble) and manure agricultural fields; and 3) as “storage on the hoof,” i.e., as an emergency source of food in the event of crop and other resource failure.

An arable sector based on small, household-owned plots seems likely in view of the absence in the Neolithic, and for much of the Bronze Age in many regions, of large, nucleated settlements, social inequality, and extensive farming systems (Halstead 1987). Intensive household management of agriculture was probably characterized by annual cereal/pulse rotation employing human labor rather than draft animals, and not the system of bare fallowing associated with “traditional” Mediterranean agriculture, which Halstead (1987: 81–83) shows to be embedded in political and economic structures of historical times.

Agriculture and Animal Husbandry in the Epirote Bronze Age: Discussion

The rugged topography, cool climate, and relative paucity of good soils that characterize much of the Epirote landscape do not constitute sufficient grounds to assume the *inevitability* of universal, long-distance pastoral transhumance. At present, the archaeological and environmental data lack the resolution and correlation necessary to establish secure causal and temporal connections between human subsistence activities and their effects on the environment. In the absence of sufficient data from excavation and survey, subsistence strategies have often been inferred to an injudicious degree based on environmental determinism and ethnographic analogy. The Sarakatsani model has been applied in misleading ways, since it has been argued mainly from negative evidence that Bronze Age communities led a mobile existence, and often the true range of adaptations among the Vlachs and Sarakatsani has been confused or conflated to better fit the model. It is not easy to determine from habitations, burials, and other cultural remains where on the continua of mobility and mix of farming and herding the groups that left them behind should be placed. Final Neolithic/Early Bronze Age Doliana is a case in point. The excavator portrays Doliana as the temporary encampment of transhumant pastoralists, citing the ephemeral construction of the excavated “hut,” for which she finds parallels in the temporary dwellings of modern transhumant pastoralists; a class of bowls similarly compared to those of modern pastoralists; several spindle whorls plausibly used for wool production; and Willis’ interpretation that the pollen data show intensive grazing

by herds that moved seasonally between pastures around Doliana and the high plateaus around Rezina (Douzougli 1996a: 47–48; Douzougli and Zachos 2002: 125, 127, 143; Willis 1997). Those dwelling at Doliana represented the kind of transhumant pastoral society that in the LBA left behind isolated burials and cemeteries at Mazaraki, Kalpaki, and elsewhere (Douzougli and Zachos 2002: 125). Yet, as outlined in Chapter 7, the pollen and cultural chronologies are too loose to demonstrate that pastoralists at Doliana had anything to do with the vegetational changes. Further, Halstead’s analysis of the faunal remains calls seasonal movement of livestock into question (Halstead 2000: 120; Douzougli and Zachos 2002: 143). At Doliana, the mortality patterns for sheep and possibly cattle best fit a strategy based on using livestock primarily for meat, or as part of a mixture of products, rather than one that emphasizes milking or a symbiosis between highland and lowland communities. The view that LBA “isolated” burials are to be associated with transhumant pastoralists must remain hypothetical for now: these were chance finds, and there was no systematic effort to discover corresponding settlements.

On the other hand, transhumance in some form may have been part of the mosaic of Bronze Age adaptations; as Halstead (2000: 122) puts it, “The ‘narrative’ moves beyond the polar opposition between large-scale, mobile pastoralism and the household herd tethered to the vicinity of the settlement.” In spite of doubts about environmental determinism, climate, topography, and soil quality cannot be ignored in a region as diverse and vertically differentiated as Epirus. Douzougli and Zachos (2002: 125) argue that in many lowland plains, river valleys, and upland basins, the richness and diversity of resources permitted a mixed economy involving farming and localized herding (see also Zachos 1997). This subsistence economy is often characterized by settlements on hillsides or mountain flanks, placed to take maximal advantage of agricultural fields in the plains and pasture land in the mountains. Douzougli (1996a: 47–48) suggests a local-scale mixed economy for prehistory wherever sufficient resources for cultivation and grazing could be found within a 30–50 km radius. If these conditions prevailed, we might expect a central settlement near the plain or basin, with special-purpose satellite activity areas at various niches within a single day’s journey. In the absence of sufficient resources within the 30–50 km radius, communities were forced to resort to some form of seasonal transhumance, following natural mountain passes, lodging in temporary camps, and disseminating ideas and material culture along the way.

We desperately need problem-oriented surveys and excavations that address issues of Epirus’ prehistoric economy. The ethnoarchaeological research in the neighboring Grevena region serves as a good model, focused on the material correlates of pastoralism in the archaeological record (Chang 1994; Chang and Tourtellotte 1993). Ideally, a series of regional surveys would span the environmental spectrum from coasts and lowland plains,

to high basins and rugged uplands. These surveys should be based firmly in geomorphological analysis of changing climate, vegetation, and resources such as water and soils. Archaeological survey, both extensive and intensive, should be combined with the excavation of key sites, from which cultural and artifactual sequences could be obtained, along with floral and faunal remains. In time, it might then be possible to take a comparative approach to the exploitation of Epirus' varied landscapes, and to really know how isolated or integrated the currently known sites were. With this basic information, it would be possible to measure the variability of ecological, sociopolitical, and economic circumstances around Epirus. For each micro-region, we might ask: Did extensive upland pasture land exist in the Bronze Age? Do the faunal remains indicate strategies consistent with seasonal migration? Is there evidence for large herds or regional markets for which seasonal movement to lowland areas would make economic sense? Or, following Douzougli, are all vital resources available within a 30–50 km radius? The answers will vary by locale, and in this manner we can begin to reconstruct the diversity of subsistence adaptations and their causes.

Using the information from the Nikopolis Project survey and a few other studies, we may speculate on subsistence strategies for a few locations in the Bronze Age. The basin of Ioannina in central Epirus offers an interesting parallel for the lower Acheron valley. Zachos (1997) assessed the interaction of humans and the natural environment in and around the basin in late prehistoric and protohistoric times. He identified three basic geomorphological units: a level plain at 470–520 masl that was occupied by the lakes Pamvotis and Lapsista (the latter now drained) and the marshy fringes and slopes surrounding it; a series of high plateaus at 700–800 masl characterized in modern times by evergreen shrubs (Kermes oak, holm oak) and brushwood vegetation; and an upland zone over 1,000 masl, primarily in the range of Mt. Mitsikeli, which is mantled in beech, birch, and deciduous oak forest. In climatic terms, the basin is subject to large annual variations in temperature, with evenly distributed winter rains and a dry period of two to three months in the summer.

In the past, the basin was well watered by the two large lakes that were apparently of greater extent in antiquity, extensive natural wetlands at the lake fringes, a number of *katavathroi* in Lake Lapsista, and many karstic springs in the hilly zones. The stagnant, marshy plain provided grazing for livestock, and material for hut construction and weaving. In the early spring, stands of fresh water from the lake and marsh began to retreat, allowing the growth of grasses that could be exploited as fodder and raw material until they were exhausted in mid-summer by dryness and grazing. Excellent grazing land in well-watered meadows could be found on the slopes overlooking the plain and in the high plateaus. That humans did in fact take advantage of the bounty of flora and fauna is suggested by some 15 sites of the late prehistoric and protohistoric periods that have been discovered fortuitously over the

years in and around the basin. Zachos points out that a systematic prospection of the landscape would undoubtedly locate many more (precisely as happened in the lower Acheron valley). Excavations at Krya, a LBA–EIA settlement located on the margin of the marshy periphery of the lakes, yielded remains of sheep, goats, and cattle indicating a focus on livestock breeding, probably with the complementary practice of limited agriculture on the plain and foothills.

Several environmental similarities exist between the Ioannina basin and the lower Acheron valley. Both regions were well supplied with fresh water and rich in flora and fauna. As I similarly conclude for the lower Acheron drainage, Zachos suggests that there may have been no need for a “winter in the plains, summer in the mountains” schedule in the Ioannina basin, since the ecosystem provided the resources necessary for year-round habitation. It can be predicted that intensive surface survey of the Ioannina basin would reveal a diversity of settlements and other activity areas not unlike that proposed in this study for the lower Acheron region. Zachos notes a preference for site location on the slopes of the lower hills and along the lake margins in the LBA and EIA, a pattern mirrored by the density of activity on the low hills in and on the margins of the Acheron floodplain. Placement of settlements was not discouraged in either case by the stagnant and possibly unhealthy environment of the marshes: in the lower Acheron region, sites such as Koulia Grove (N-7) and Pountas East (N-10) were founded only a few meters above deep, seasonal wetland.

The main determinant of site location in both regions was proximity to dependable sources of fresh water. The main differences between the Ioannina basin and the lower Acheron valley arise from their respective locations. In climatic terms, the lower Acheron region experienced milder temperatures with less seasonal variation, which may have caused agriculture to be more widespread than in the Ioannina basin. The wetlands may have been more extensive and of longer seasonal duration in the valleys of the Vouvos, Kokytos, and Acheron rivers. The most remarkable difference, however, lay in the lower Acheron valley's coastal position, which permitted the local population to be exposed to influences from the sea. This phenomenon and its consequences for the spatial patterning of human activity were unique in Epirus.

Locations in the high mountains and peripheral, isolated basins presented very different conditions, and in these places there must have been a greater focus on livestock rearing. Regrettably, we know rather little about them. The recent, multidisciplinary research at Doliana shows both the promise and the challenges of reconstructing Bronze Age economies of the hinterland. At that small site, sheep, goat, and cattle were essential to subsistence, but we are not sure what role agriculture played. Nor do we know whether people lived there year-round, or only visited in their seasonal migrations. Further, although an argument

has been advanced linking Doliana through seasonal transhumance to the Rezina marsh higher in the mountains, there is no solid evidence linking Doliana to any other place, either higher or lower. The tiny excavated area makes it impossible even to know how extensive the habitation was. Thus, on present knowledge Doliana may fit into a wide range of subsistence mixes involving herding and cultivation.

Similar questions might be posed of Dodona, situated in an upland basin in a narrow valley between the mountains Tomaros and Manoliassa, approximately 22 km southwest of Ioannina. The site's environmental setting is crucial to considerations of the reasons for its placement and the nature of the settlement. The basin floor is well watered by the surrounding mountains, creating an island of fertility. Equally important is the geographical location, a crossing place on natural routes between north and south, and east and west. The headwaters of the Louros River to the south, the Acheron River to the southwest, and a tributary of the Kalamas to the northwest, are all easily accessible from Dodona. To the east, the Arachthos River valley is less than 25 km distant, as is Lake Pamvotis (Ioannina) to the northeast. From these places, further routes and passes lead to Macedonia and Thessaly, southern Epirus and the Ionian coast, and Albania. In recent times, the Dodonean plain has been an important stopping point for transhumant pastoralists on their seasonal rounds to water and feed their animals. It is easy to understand how environmental and ethnographic information has encouraged an interpretation of Dodona as a major pastoral center in the Bronze Age.

The archaeological data are limited, but add some interesting details. The architectural remains comprise traces of wooden huts, stone-lined postholes, hearths, and storage pits. The artifact assemblage includes imported Mycenaean pottery and Aegean-type weapons and double axes, found in moderate quantities alongside the dominant local coarse ceramics. Together, these lines of evidence indicate a rural, sedentary settlement in the LBA. We possess neither burials nor plant or faunal remains to confirm or modify this picture. Given the fertility of its setting, Dodona may have been one of Douzougli's "central settlements" placed at a liminal zone in the landscape between adjacent horizontal and vertical environments. Satellite sites and activity areas would be predicted in a 30–50 km radius in the surrounding basins, hills, and mountains, supporting a mixed farming/herding economy. But the imports demonstrate that Dodona was in touch, however indirectly, with the Mycenaean world, raising questions about the nature of these connections. Because the entry of Mycenaean objects has been demonstrated for the lower Acheron valley and the northern Ambrakian coast at Skaphidaki, it is reasonable to suppose that this material found its way to Dodona via the Louros and Acheron valleys, although a journey from the coast along the Kalamas valley is also plausible. If so, mobile pastoralists may have articulated the coasts to hinterland locations such as Dodona. The role of long-distance transhumance in this

process remains uncertain if we model the economy and movements of people purely on the basis of the environment's variable resources. There may have been additional social and economic incentives in the LBA for coastal–hinterland connections, and I shall explore these below in the context of the lower Acheron valley. A local survey of the Dodona basin would be quite useful in placing the settlement in a broader cultural and economic context, and providing evidence to answer the questions posed above.

Hunting and Gathering

The hunting of large animals diminished in importance in the Bronze Age as meat and secondary products were increasingly obtained from domesticated animals, and as wild animals were driven farther from human settlement by the clearance of lowland forests and the monopolization by humans and their livestock of resources of the plain and lowlands. The presence of faunal remains of wild boar, deer, and birds at Bronze Age sites in Epirus, however, shows that some wild species were hunted, perhaps to supplement the diet or in times of resource stress or failure. Yet already at Final Neolithic Doliana, domestic species make up 90% of the faunal assemblage (Douzougli and Zachos 2002: 138), and notional information from Bronze Age sites does not indicate major changes. Further analysis of the lithic assemblages from surface and excavated sites in the lower Acheron valley may shed light on changing subsistence strategies in prehistory. For example, the relative chronology of arrowheads and sickle elements may suggest a development from Neolithic to Bronze Age times away from hunting and toward farming.

Fishing may have been an important supplement to the dietary staples, particularly in the southern portion of the plain around the wide Bronze Age bay at the Acheron mouth. Leake (1835 [IV]: 52) observed a wealth of fish in the rivers and in the lakes formed by the spring floods. Fish bones, fish hooks, and line weights are rarely reported from Bronze Age contexts, however.

Hypothetically, gathering of wild plants and other resources of the landscape remained an important activity throughout the Bronze Age. Foraging could fill essential needs for food, fodder, tinder, construction material, and raw material for ceramics and stone tools. The paleoenvironmental data indicate that wild plant species grew in dense stands in and around the lower Acheron valley. Wild olives, grapes, grasses, fruits, and nuts could be used for food and fodder; twigs and branches for fodder or tinder. The numerous sickle elements with preserved silica gloss that were collected in the surface survey may have been used to harvest wild as well as cultivated plants. Timber for construction may have been sought in the upper elevations east and south of the plain, although most building material may have been found in the marshy plain: reeds, grasses, branches, and clay for the wattle-and-daub huts for which there is archaeological evidence in the form of daub with

reed impressions (e.g., at Galatas in the Thesprotiko valley, site N-19). Baskets and other woven objects could be fashioned from the same floodplain products. Clay from wetlands and natural outcrops was collected for the manufacture of the local pottery, and possibly for mudbricks as well. Ubiquitous nodules of flint were picked up and processed into the usable flakes and stone tools that provided the implements of everyday life.

In conclusion, subsistence across Epirus in the Bronze Age was achieved by endless variations on mixed farming and herding, in which the mix of agricultural and pastoral pursuits could be varied in response to local ecological conditions, short-term fluctuations, social and political conditions, economic opportunities, and so forth. Hunting, gathering, and fishing must have retained some importance in the Bronze Age, as a means to supplement the diet or as a response to short-term resource scarcity. The lower Acheron valley was an Epirote landscape with particular resources and conditions under which a remarkable record of human activity developed. For the remainder of this chapter, I turn to a detailed analysis of settlement and subsistence patterns in the lower Acheron valley, in the hope of showing how systematic archaeological survey can illuminate many aspects of the Bronze Age worlds of Epirus.

Settlement Patterns in the Lower Acheron Valley

Taken together with information from excavations and chance finds prior to 1991, the data acquired in the surface survey form a spatial record of the physical remains of Bronze Age activity in the lower Acheron region. But it is important to consider whether the record is a complete one; in other words, do the data faithfully represent the scale and diversity of activities that were part of daily life? Further, are the data an accurate indication of the surface remains that were available to be found in the lower Acheron valley? On this issue, Wandsnider and Camilli (1992: 170) make a useful distinction between the surface archaeological *record*, or the empirical reality of surface archaeological deposits that are available to be found at a given moment in time, and the surface archaeological *document*, or the surface archaeological deposits that are actually found and documented. The degree to which the archaeological document conforms to the archaeological record depends on factors related to the archaeological record itself, e.g., artifact obtrusiveness, density, and clustering, and on the quality of the survey in terms of research design and execution (Wandsnider and Camilli 1992: 170–171). Empirical research has shown that the surface record is constantly changing as erosion, deposition, downslope movement, vegetation growth, plowing, and a host of other factors cause surface artifacts to be buried, exposed, transported, revealed, or concealed (e.g., Ammerman 1981, 1985, 1993: 369–371). Even under ideal conditions, much of the material that survives from the Bronze Age (which is only a fraction of that created and expended in the course of two millennia) will not be

exposed on the surface, and there are therefore serious limits on the ability of archaeologists to produce a document that is faithful to the true scope of human action in a distant period of the past.

As archaeological objects of the surface and near subsurface are continually reworked by natural and human agents, archaeological scatters that are encountered in the field rarely yield direct interpretations of human behavior. Assessing the nature of artifact concentrations is often problematic, requiring the disentanglement of numerous postdepositional events that remove objects from their primary context of deposition. Although the distorting factors inherent in the surface archaeological record have long been known (particularly since Schiffer's [1987] definitive statement), archaeologists continue to grapple with their consequences, while trying to incorporate the appropriate correctives in their interpretations (see, e.g., Schofield 1991; Allen 1991). The archaeological document that has been produced in the lower Acheron region can be assessed with reference to spatial coverage, survey intensity, and other variables that influence the strength of inferences about Bronze Age realities. It will be useful, before embarking on an analysis of the patterns of human action on the landscape, to gain some perspective on the data from excavation and survey that form the basis for our interpretations.

Excavation data

Ephyra is the only site in the lower Acheron valley at which extensive Bronze Age remains have been found and excavated over a number of years. The Nekyomanteion, which shares a long ridge with Ephyra (and perhaps cannot be considered an entirely separate entity), produced Bronze Age material, including Mycenaean pottery, on a lesser scale. Scattered Bronze Age remains were also encountered in excavations at Kastri in the Acheron plain. Despite an impressive collection of excavated objects from Ephyra, little is actually known about the settlement because the finds and their contexts are not yet published. Thus it is not yet possible to assess the site in terms of population density, intrasite organization, relationship to the hinterland, and so forth. Stratigraphy at the site was poor or nonexistent; only the burials, grouped in three tumuli, provided coherent contexts. Owing to the lack of stratigraphic phasing, it is not known if Ephyra was occupied in the early phases of the Bronze Age. Much effort was directed to the excavation of the burial tumuli, in part because undisturbed domestic contexts could not be located.

The situation with respect to excavation in the lower Acheron valley is much the same as in the rest of Epirus. Stratified prehistoric deposits are lacking, and analyses and interpretations of the excavated finds have not yet appeared. The results of the Nikopolis Project surface survey are a significant contribution to the understanding of the settlement at Ephyra, for two reasons: 1) the survey data

THE LOWER ACHERON VALLEY IN THE BRONZE AGE

place the major settlement in its local and regional context, shedding light on the nature of interactions between Ephyra and its hinterland; and 2) an intensive survey of Xylokaastro ridge outside the lower walls revealed spatial and locational information concerning the extent of the area densely occupied in the Bronze Age, and diachronic changes in settlement focus from prehistoric to historical times (see site entry, Chapter 4). In the future, detailed analysis of the excavated data will form an important measure of the inferences made from surface material.

Surface survey data

While it is of course desirable to achieve complete surface coverage of the study area, this goal is usually unrealistic given constraints on time, money, labor, and other variables, and some method of sampling is normally applied. As explained in Chapter 1, a study area of 109 sq km was selected in the lower Acheron valley and stratified by topographic type (Figure 1.5, Table 1.2). There was never any hope, or even desire, to walk all 109 sq km as survey units in three field seasons of five weeks each. It will be recalled that the lower Acheron drainage was just one research focus within a vast study area of more than 1,200 sq km (albeit an important one to the Project), and archaeological surface survey comprised one of several research components of the Nikopolis Project, with which labor and resources had to be shared (Tartaron 2003).

Two principal reductions to the survey universe were made on the basis of geomorphological study of the lower Acheron plain: the floodplain was found to be mantled in several meters of recent alluvium, and thus unlikely to preserve any trace of Bronze Age activity, and a program of geological coring demonstrated that Glykys Limin penetrated inland six kilometers or more, prompting the removal of the coastal wetland from consideration (Table 9.2). Both the plain and the bay area were tested with several survey units, which failed to produce pre-modern artifacts. A further percentage of the surface area was not amenable to survey, for reasons of impassable vegetation, restricted access, or urban construction. The effect of these exclusions was to reduce the active study area by at least 62 sq km (the total surface area that was occupied by urban settlement, impenetrable growth, or was otherwise inaccessible is not precisely known), leaving a maximum of 47 sq km on which Bronze Age material might be discovered (Table 9.2). Table 9.3 presents the total survey coverage of the landscape in survey units of high intensity (tracts), medium intensity (walkovers), and low intensity (scouting), and in Table 9.4 the coverage in systematic units (tracts and walkovers) is itemized by topographic class. Intensive tracts, featuring near-total ground coverage at intervals of five to eight meters, accounted for 0.53 sq km. It is anticipated that few artifact scatters went undetected in these units. A total of 0.62 sq km was investigated in medium-intensity walkovers, also systematic but walked at greater spacing intervals (15 meters or more). Most obtrusive artifact scatters should have been detected by

walkovers, but small or unobtrusive scatters may have been missed in many cases. Finally, the figure of 1.50 sq km for coverage by unsystematic scouting trips made between 1991 and 1995 is an estimate based on field notes and other documents. The approximate total of 2.65 sq km investigated by systematic and unsystematic methods represents 2.43% coverage of the entire study area defined at the outset for the lower Acheron; and 5.63% of the modified area as defined by the exclusion of the floodplain and swamp/bay classes from consideration (Table 9.3).

The non-random character of the sample is revealed in the coverage accorded to each topographic class (Table 9.4). A clear bias in favor of the foothills and coastal classes may be explained as the result of several factors: 1) scouting and ongoing research suggested a high probability that extensive evidence for Bronze Age activity would be found at these locations; 2) the elimination of the floodplain and swamp/bay classes removed more than half of the originally defined study area from consideration; 3) the foothills and coastal classes offered wide areas of reasonably good ground visibility and ease of mobility; and 4) for logistical reasons, chiefly the transportation time required, the more isolated high hills locations, which in addition presented far poorer survey conditions, could not be visited on a regular basis. In spite of the limitations placed on the upland areas, survey teams managed to cover 0.155 sq km in a systematic way, amounting to 13.48% of the total systematic coverage, and scouting contributed some supplementary information. Substantial data were collected in upland zones elsewhere in the Nikopolis Project survey area, and these offer useful comparanda.

A measure of justification for the judgmental selection of survey locations in the low hills in and around the plain may be taken from the relative yields of activity loci (Table 9.5). The foothills class produced 15 of the 21 Bronze Age findspots discovered by the Nikopolis Project in the lower Acheron valley; by contrast, four were discovered in the coastal zone, and two in the high hills. Extrapolated as an average number of activity loci per square kilometer, these rates of discovery would yield 47.62 loci/sq km in the foothills, 12.90 loci/sq km in the higher elevations, and 6.34 loci/sq km on the coast. The relative site frequencies among the topographic classes, rather than the projected yields, are significant. One cannot extrapolate the yields from the modest area covered systematically to the entire survey area, and thereby expect to discover something on the order of 860 sites. Survey locations in all topographic classes were targeted for favorable survey conditions and high potential for Bronze Age activity. Ideally, the placement of contiguous tracts, encompassing all terrain conditions, over the entire study area would provide a full accounting of both positive and negative evidence for human action in the Bronze Age, and would undoubtedly yield lower figures for loci per square kilometer. Whereas the survey coverage within the lower Acheron region is modest and biased to some degree, I find no reason to exclude inferences from the surface archaeological record

THE LOWER ACHERON VALLEY IN THE BRONZE AGE

Table 9.2 Surface area available for study by topographic class, lower Acheron valley.

<i>Topographic class</i>	<i>Total area (sq km)</i>	<i>Eliminated (sq km)</i>	<i>Modified area (sq km)</i>	<i>Percent of modified area</i>
Floodplain	53.40	53.40	0	0
Coastal	6.85	0	6.85	14.56
Swamp/bay	8.55	8.55	0	0
Foothills (< 100 masl)	17.64	0	17.64	37.49
High hills (> 100 masl)	22.56	0	22.56	47.95
Total	109.0	61.95	47.05	

Table 9.3 Summary of coverage by survey intensity.

<i>Unit type</i>	<i>Number of units</i>	<i>Coverage (sq km)</i>	<i>Percent of total area</i>	<i>Percent of modified area</i>
Tracts (systematic)	146	0.53	0.49	1.12
Walkovers (systematic)	44	0.62	0.57	1.32
Scouting (unsystematic)	—	1.50*	1.38	3.19
Total	190	2.65	2.43	5.63

* Estimated figure based on field notes and other documents.

Table 9.4 Summary of systematic survey coverage by topographic class.

<i>Topographic class</i>	<i>Coverage (sq km)</i>	<i>Percent of systematic coverage</i>	<i>Percent of topographic class (total area)</i>	<i>Percent of topographic class (modified area)</i>
Floodplain	.014	1.22	0.03	—
Coastal	.631	54.87	9.21	9.21
Swamp/bay	.035	3.04	0.41	—
Foothills (< 100 masl)	.315	27.39	1.79	1.79
High hills (> 100masl)	.155	13.48	0.69	0.69
Total	1.15			

Table 9.5 Density of activity loci by topographic class, lower Acheron valley.*

<i>Topographic class</i>	<i>Systematic coverage (sq km)</i>	<i>Number of activity loci</i>	<i>Projected number of loci/sq km</i>
Floodplain	.014	0	—
Coastal	.631	4	6.34
Swamp/bay	.035	0	—
Foothills (< 100 masl)	.315	15	47.62
High hills (> 100 masl)	.155	2	12.90

* Only the 21 activity loci discovered by the Nikopolis Project are included

about settlement and subsistence. The data acquired from archaeological survey and palaeoenvironmental research form a substantial base of evidence from which an initial, hypothetical reconstruction of settlement and subsistence behavior is possible.

Chronological considerations and developments in settlement and demography

The sorry state of Bronze Age chronology in Epirus (see Chapters 3 and 5) places limits on the interpretive potential of the data, and the present study does not solve this

fundamental problem. The excavation of well-stratified deposits with internal phasing spanning the Bronze Age holds the key to meaningful progress in the long term. Nevertheless, analysis of the ceramic and lithic objects (Chapters 5 and 6) did suggest certain refinements to the artifact chronology on formal and stylistic grounds, from two main sources. It was argued that knowledge of dark-surfaced pottery in shapes imitating Minyan prototypes entered Epirus from Albania at the end of the Middle Bronze Age (during the Shaft Grave era), and arrived in southwestern Epirus a short time later. It was proposed that sherds from these vessels must be dated not earlier

than the beginning of the Late Bronze Age, and not later than the Early Iron Age. A second source of refinement came from a preliminary analysis of the flaked stone tool industry, which had not been studied previously. A small number of specimens, with a chronological range from Late Neolithic to Late Bronze Age, can be dated by comparison with types found elsewhere in Greece. These modest clarifications, taken together with the Mycenaean imports and orange-red wares that have always formed the chronological foundation for the latter stages of the Bronze Age in Epirus, allowed the existence of broad chronological components to be established at many sites.

On the basis of these chronologically sensitive artifacts, a provisional chronological framework for activity loci in the lower Acheron valley can be presented (Table 9.6; Figures 9.1–9.6). Eleven of these findspots can be dated no more precisely than to the Bronze Age. Fourteen have a LBA component; of these, nine have material that may be assigned to LH III. Continuity into the EIA is indicated at six locations. A striking feature of the provisional chronology is the lack of findspots that can be assigned to the Early and Middle Bronze Age: no sites can be attributed to the EBA, and the evidence for possible MBA activity is limited to sickle elements of Middle to Late Helladic type at two sites. There is no reason to assume that the sickle elements must be earlier than the Late Bronze Age, and the single obsidian blade segment discovered on the surface at Koulia Grove may belong to an early phase of the Bronze Age, but because obsidian was used throughout the Bronze Age to make similar blades, this occurrence cannot be closely dated. The apparent paucity of evidence for the period extending from ca. 3000–1600 B.C. conforms to the general picture of settlement in Epirus as it is currently known. From the Neolithic period there are the FN/EBA site at Doliana, dated by means of calibrated radiocarbon determinations to between 3600 and 3100 B.C. (Douzougli and Zachos 1994: 17); scarce artifacts associated with radiocarbon dates at Asphaka north of Ioannina (Higgs and Vita-Finzi 1966: 22–23), Gouves between Dodona and the sources of the Louros River, and Kastritsa on the shores of Lake Pamvotis overlooking Ioannina (Papadopoulos 1974; Dakaris 1972a: 46–49; Douzougli and Zachos 2002); four arrowheads probably of Late or Final Neolithic type found in the Nikopolis Project survey at Koulia; and a few other sites, primarily caves, for which a Neolithic date has been claimed but not clearly substantiated (Papadopoulos 1974; Dakaris 1972a: 46–49). After ca. 3000 B.C. comes a lacuna of fourteen centuries into which no material can be placed with certainty. I believe this apparent hiatus represents a lack of chronological resolution rather than a general depopulation of the landscape during the centuries corresponding to the Greek Early Helladic and Middle Helladic periods. No upper chronological limit has yet been established for the local coarse ware (K II/III); as I argued in Chapter 5, it is probable that K II/III pottery was in use from the earliest phases of the Bronze Age. Even greater uncertainty characterizes the putative Bronze Age lithic industry, for which no upper *or* lower limits are yet known.

As a consequence of this uncertainty, it is difficult to argue that any of the sites reported in the study was definitely unoccupied in the earlier phases of the Bronze Age.

Independent evidence from burials, however, appears to indicate that the level of population was higher in the Late Bronze Age in Epirus than previously. Graves and grave groups are known from around 30 later prehistoric sites (Table 3.1), comprising cist graves, tumuli, one pit grave, and one tholos tomb (Soueref 1986: tab. VIII; Andreou 1987; Andreou 1994). The vast majority of these burials can be dated, by associated finds, to the Late Bronze Age or later. The tholos and most of the cist graves contained objects of Mycenaean origin or inspiration, and the tumuli are datable to the end of the Bronze Age and the Early Iron Age. The concentration of burial evidence in the latter stages of the later prehistoric period is striking, but does it reflect a real trend in population size? Unless a reporting bias against graves without Mycenaean or other exotic furnishings is involved (and there is no evidence for that), we may speculate that a bias based on obtrusiveness or preferential preservation is plausible. Cist graves, tholoi, and tumuli were fitted with durable materials: limestone slabs lined the sides of cist graves; the tholos at Kiperi was formed by courses of local sandstone, and burial tumuli (usually containing slab-lined cists) were typically marked by a large earthen mound, often surrounded by a circle of stones. Because most graves in Epirus are found fortuitously, discovery of more obtrusive burial constructions is favored. If burial practices in the earlier phases of the Bronze Age involved the use of simple pits, for example, rather than durable stone construction (that is, if there is a chronological component to grave construction), they would be both less obtrusive and less likely to be preserved for thousands of years. It is worthy of note that only one unlined pit burial has been reported (from Paramythia, dated to LH IIIA–IIIB; Soueref 1986: tab. VIII). Whereas it is prudent to reserve judgment on the depopulation of Epirus in the EBA and MBA, the available data point to a modest, and perhaps reduced, population in the years from 3000–1600 B.C.

Whatever the level of population, the whole of Epirus experienced intense isolation from outside influences in the early phases of the Bronze Age, which apparently signaled a retrenchment even from the preceding Neolithic period. In southern Epirus, the isolation probably lasted until the beginning of the Late Bronze Age, despite the long coastline on the Ionian Sea and the Ambrakian Gulf. One of the potential consequences of an inward-looking society is extreme conservatism in material culture, which may help to explain the lack of stylistic and technological change in K II/III pottery.

Several lines of evidence indicate that in the course of the Late Bronze Age (ca. 1650–1050 B.C.), the lower valley of the Acheron and its tributaries experienced a growth of settlement and population that culminated in a period of settlement aggregation and interaction with a wider

THE LOWER ACHERON VALLEY IN THE BRONZE AGE

Table 9.6 Provisional chronology for late prehistoric loci in the lower Acheron valley.*

<i>Site</i>	<i>ID</i>	<i>LN–FN</i>	<i>BA</i>	<i>EBA</i>	<i>MBA</i>	<i>LBA</i>	<i>LH III</i>	<i>EIA</i>
Alonaki Promontory	N-1		●					
Ammoudia	IF-1		[●]					
Ayia Eleni	N-2		[●]			●	●	
Cheimerio-Kouteti	E-1		?					
Dikorpho	E-2		●			●	●	
Ephyra-Nekyomanteion	E-3		●			●	●	●
Kastri	E-4		●			[●]	[●]	
Kastriza	N-3		●			●	●	●
Kastriza Vicinity	OS-1		●					
Koroni	N-4		●					
Koronopoulos	N-5		●			●	●	
Koulia	N-6	● L	●					
Koulia Grove	N-7		●			●		
Koumasaki	N-8		●		[●] L	●	●	
Pountas	N-9		●		[●] L	[●] L		[●]
Pountas East	N-10		●			●		●
Pountas East Vicinity	OS-2		●					
Skepaston	N-11		●					
Spilaion	N-12		●			[●]		
Themelo	E-5		●			●	●	
Tsouknida	IF-2		[●]					
Valanidorrachi	IF-3		●					
Vlachika	OS-3		[●]					
Vouvopotamos	N-13		●			●	●	●
Xirolophos #1	N-14		●					
Xirolophos #2	N-15		●			●		●
Total		1	25	0	2	14	9	6

*Key: LN–FN = Late Neolithic to Final Neolithic; BA = datable to the Bronze Age generally; EBA = Early Bronze Age; MBA = Middle Bronze Age; LBA = Late Bronze Age; LH III = Late Helladic III; EIA = Early Iron Age. Assignments based on fewer than three artifacts are denoted by brackets. Assignments based solely on lithics are denoted by “L.”

Mediterranean world in LH IIIA–LH IIIC. During this period, two waves of influence can be detected from the north, one at the end of the Middle Bronze Age, and another at the end of the Late Bronze Age. From the south, influence from the Mycenaean world came from both Aitolokarnania and the Ionian Islands, beginning in LH IIIA1 or LH IIIA2 and persisting into LH IIIC. Population growth during the Late Bronze Age may have been gradual, or alternatively a rapid florescence fueled by the impact of influence from the Mycenaean world sometime after 1400 B.C. Unfortunately, a lack of chronological precision precludes the displaying of numbers of sites occupied per unit time (e.g., per century: Rutter 1993: 757) in the earlier phases of the LBA. The presence of pottery of pseudo-Minyan type at several sites in the lower Acheron valley and elsewhere in the Nikopolis Project study area (Table 5.2) may indicate occupation in the Shaft Grave era or

shortly thereafter. Radiocarbon determinations at two sites outside of the Acheron valley suggest a similar chronology. At Skaphidaki on the Ayios Thomas peninsula, a stratum filled with discarded sea shells, stratified directly below a layer in which numerous sherds from imported Mycenaean vessels were discovered, returned a calibrated radiocarbon date of ca. 1700 B.C. (Figures 4.15, 4.16). In a stratified road cutting near the village of Galatas in the Thesprotiko valley, a stratum containing copious pottery and straw-impressed daub returned a calibrated date of ca. 1400 B.C. (i.e., the beginning of LH IIIA), and there existed cultural layers above and below this stratum.

Finally in LH III (1400–1050 B.C.) the signs of increased settlement and population density in the lower Acheron valley are unmistakable. The construction of a walled citadel-like settlement at Ephyra, and the presence of

THE LOWER ACHERON VALLEY IN THE BRONZE AGE

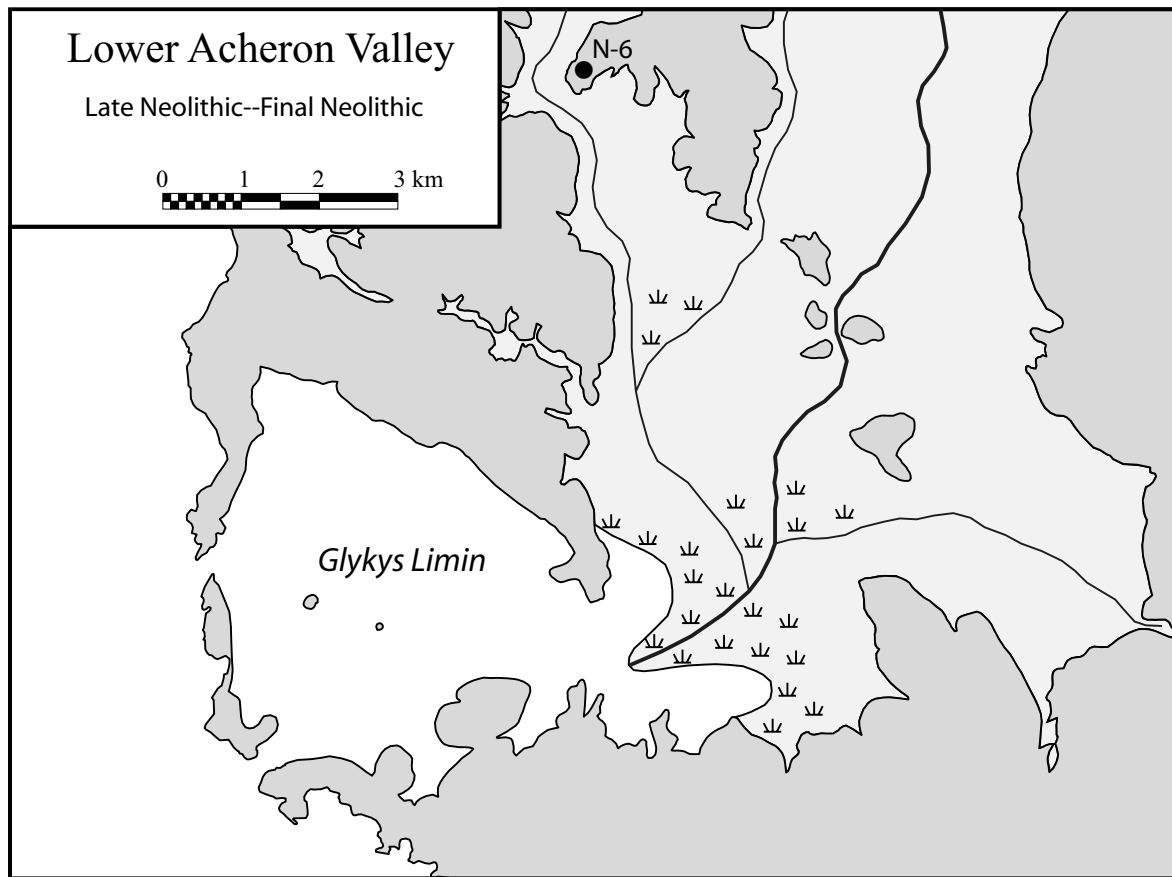


Figure 9.1 Diachronic site map for the lower Acheron valley: LN-FN. Base map courtesy Mark R. Besonen.

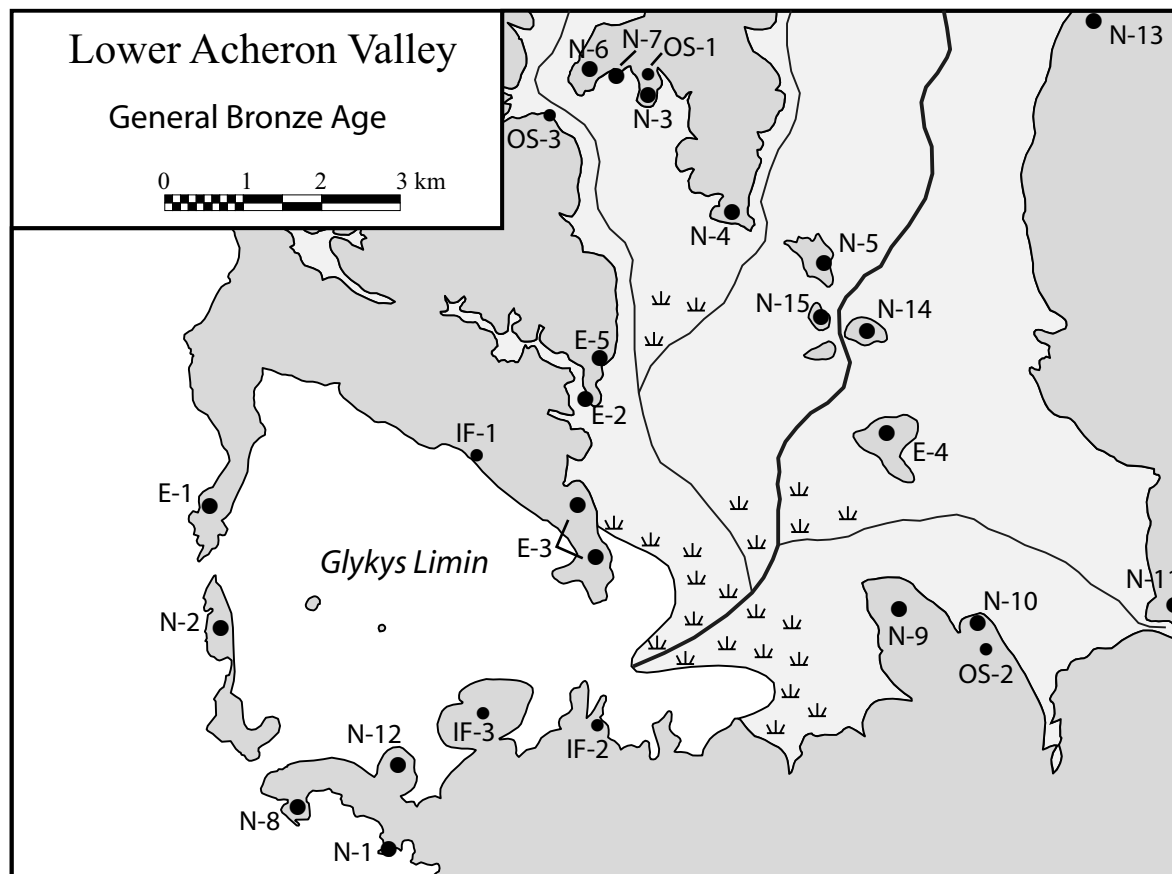


Figure 9.2 Diachronic site map for the lower Acheron valley: general Bronze Age. Base map M. Besonen.

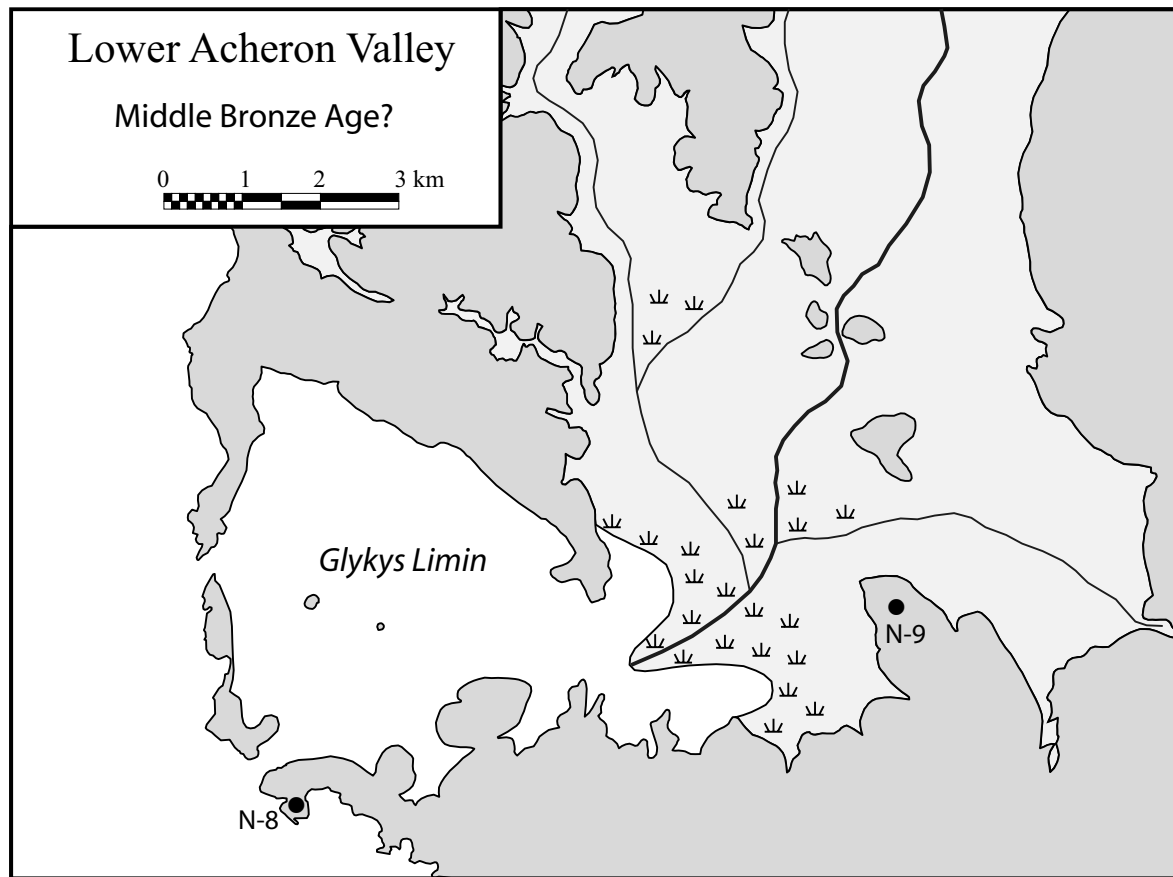


Figure 9.3 Diachronic site map for the lower Acheron valley: MBA. Base map courtesy Mark R. Besonen.

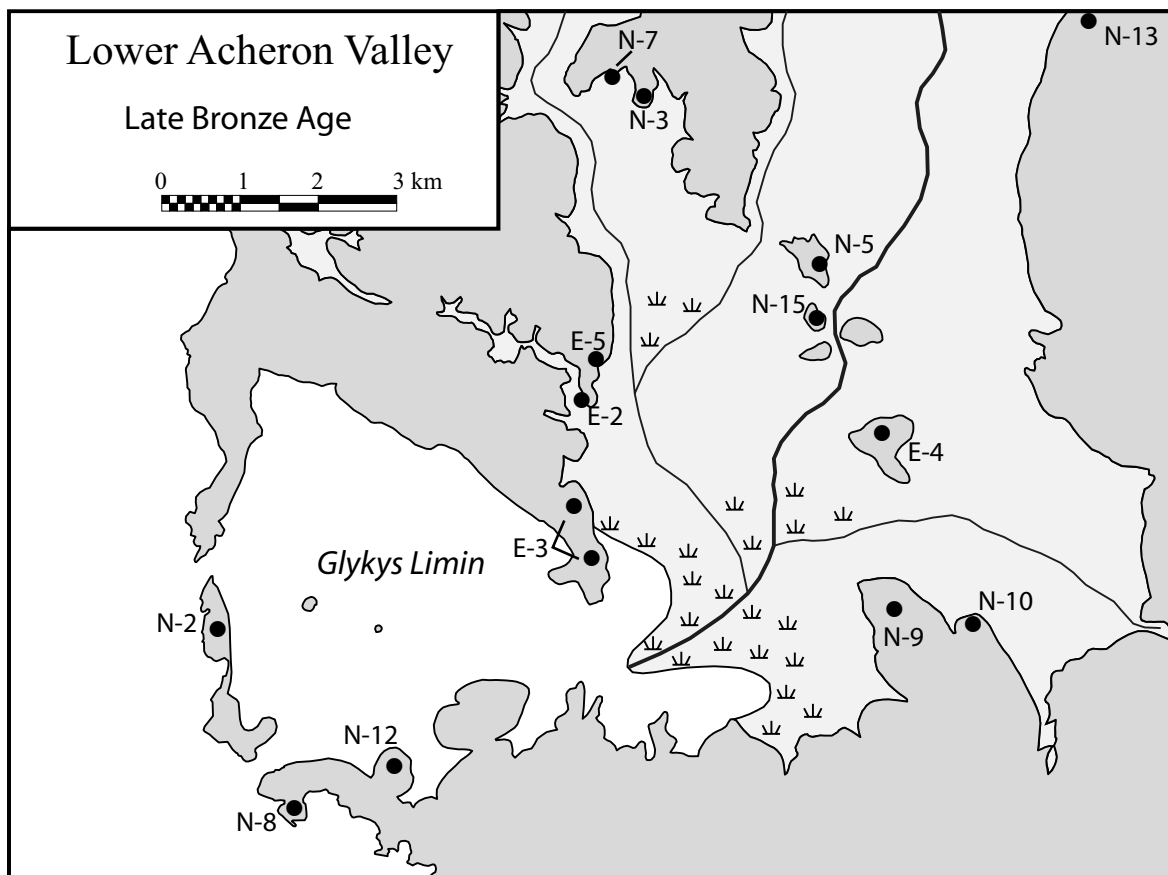


Figure 9.4 Diachronic site map for the lower Acheron valley: LBA. Base map courtesy Mark R. Besonen.

THE LOWER ACHERON VALLEY IN THE BRONZE AGE

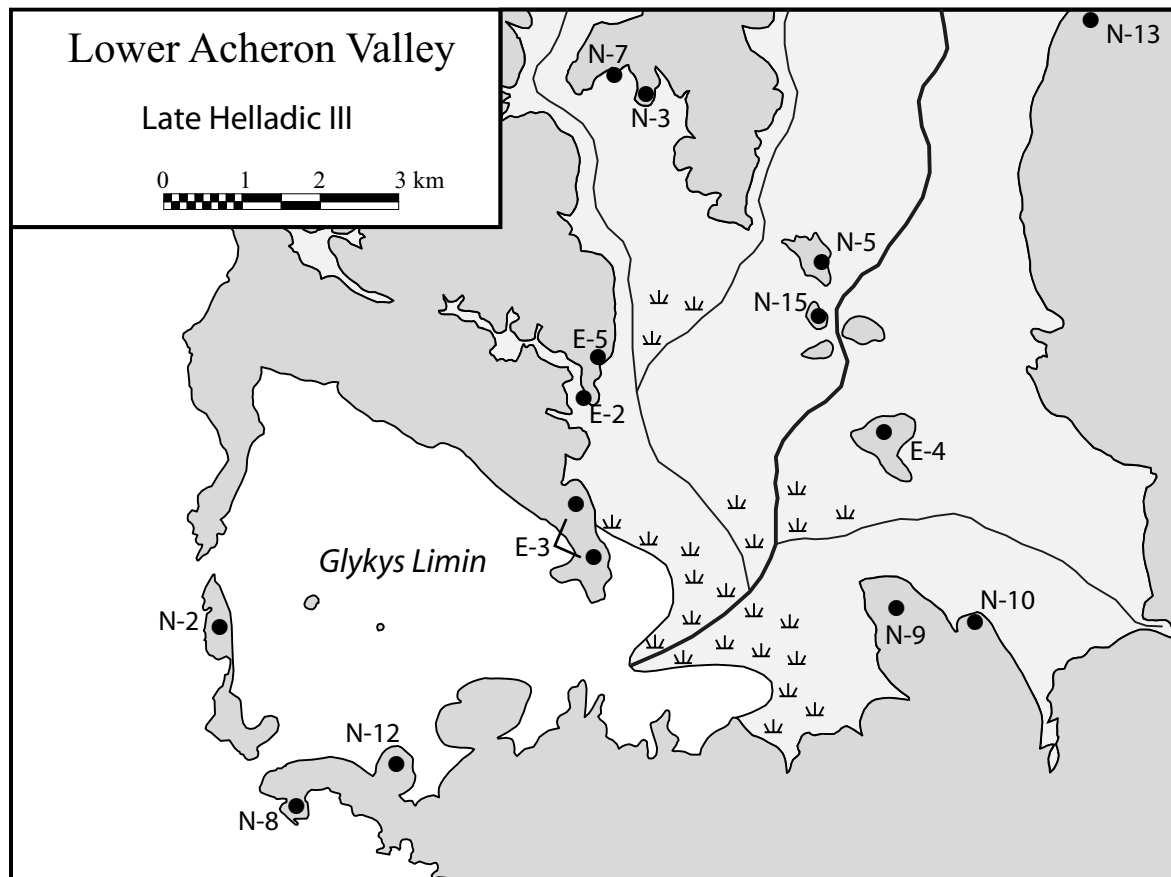


Figure 9.5 Diachronic site map for the lower Acheron valley: LH III. Base map courtesy Mark R. Besonen.

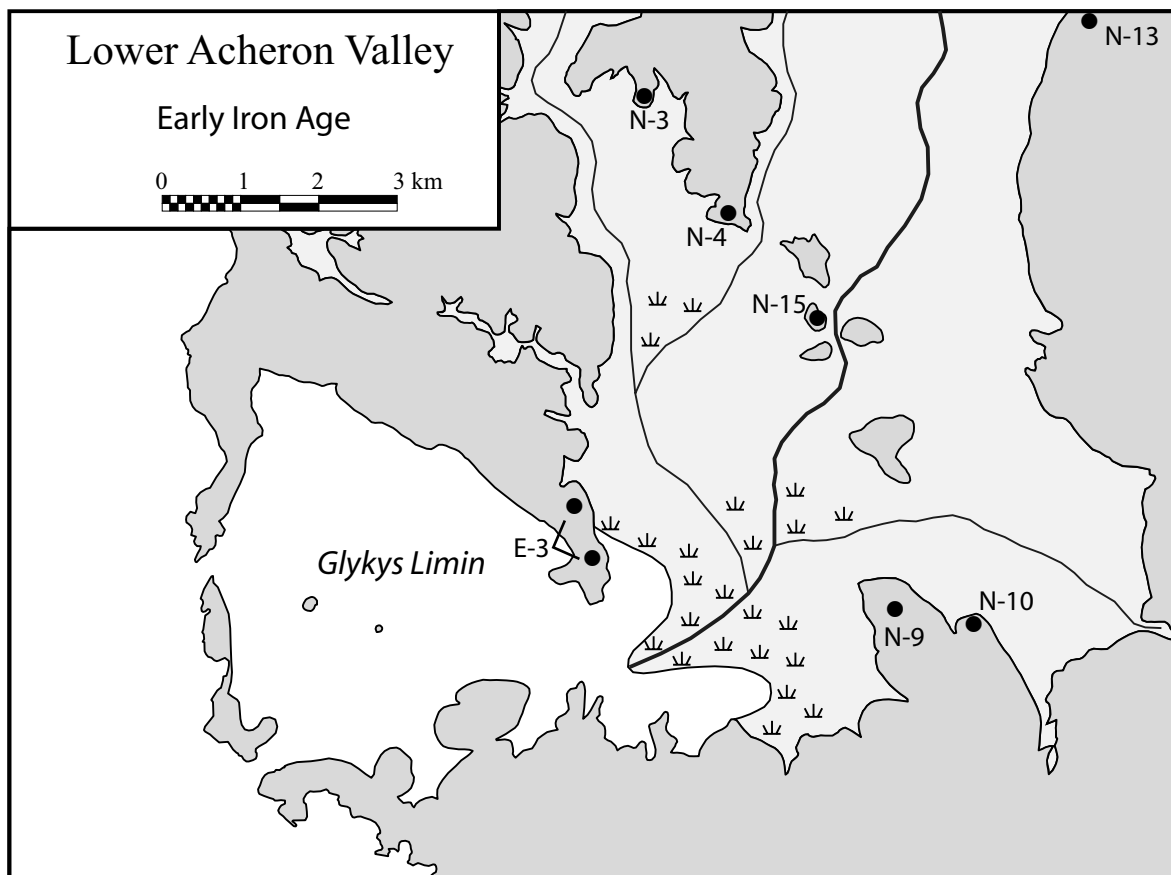


Figure 9.6 Diachronic site map for the lower Acheron valley: EIA. Base map courtesy Mark R. Besonen.

THE LOWER ACHERON VALLEY IN THE BRONZE AGE

Table 9.7 Artifact density data for findspots in the lower Acheron valley.*

<i>Site</i>	<i>ID</i>	<i>Extent of scatter</i>	<i>Systematic coverage</i>	<i>BA pottery sherds</i>	<i>Pottery density/ ha</i>	<i>Lithic pieces</i>	<i>Lithic density/ ha</i>	<i>Mean ground visibility</i>
Alonaki Prom.	N-1	0.08	0.21	7	33.3	4	19.0	8
Ayia Eleni	N-2	0.60	6.95	2	0.3	4	0.6	3
Kastriza	N-3	5.38	5.38	116	21.6	45	8.4	5
Koroni	N-4	1.00	1.00	25	25.0	3	3.0	5
Koronopoulos	N-5	0.35	0.66	93	140.9	8	12.1	4
Koulia	N-6	0.60	7.18	11	1.5	478	66.6	6
Koulia Grove	N-7	0.60	0.60	30	50.0	9	15.0	6
Koumasaki	N-8	32.00	10.33	213	20.6	1284	124.3	4
Pountas	N-9	0.08	2.61	24	9.2	254	97.3	9
Pountas East	N-10	2.00	2.00	52	26.0	112	56.0	7
Skepaston	N-11	0.01	2.90	7	2.4	0	—	7
Spilaion	N-12	30.25	14.33	171	11.9	5291	369.2	7
Vouvopotamos	N-13	1.40	3.00	401	133.7	200	66.7	8
Xirolophos #1	N-14	0.24	1.29	39	30.2	14	10.9	5
Xirolophos #2	N-15	4.40	0.60	131	218.3	52	86.7	8
Ephyra-Nekyo.	E-3	56.85	17.00	486	28.6	299	17.6	5
Kastri	E-4	33.00	11.00	41	3.7	41	3.7	6
Ammoudia	IF-1	—	1.02	1	1.0	2	2.0	3
Tsouknida	IF-2	—	8.64	1	0.1	14	1.6	3
Valanidorrachi	IF-3	—	5.68	3	0.5	890	156.7	6
Kastriza Vicinity	OS-1	—	0.48	3	6.3	10	20.8	5
Pountas East Vic.	OS-2	—	7.00	16	2.3	63	9.0	5
Vlachika	OS-3	—	0.29	1	3.4	5	17.2	8

* Only those activity loci that were investigated by the Nikopolis Project are included

architecture of Mycenaean type at other sites nearby, signals an organization of population and labor on a scale never before seen in Epirus. The largest settlements of the Bronze Age in southwestern Epirus all have Late Bronze Age components, and are concentrated near the Ionian coast in the lower Acheron valley. The burial evidence, cited above, supports the notion of a larger population in LH III, with continuity into the EIA. The survey data seem also to confirm continued occupation in the EIA in the lower Acheron valley: of 14 sites occupied in the LBA, six show evidence of use in the EIA as well (Table 9.6).

The Late Bronze Age: Reconstruction of Settlement Patterns

The basic data concerning the location, size, artifact composition, and inferred function of the Bronze Age sites in the lower Acheron drainage are presented in Tables 9.7 and 9.8. Because of the limitations of chronology, a reconstruction of settlement and subsistence patterns is possible only for the Late Bronze Age. Nonetheless, many of the sites attributable only to the Bronze Age generally provide information about the location and function of human activity in the Late Bronze Age. In this section, a model of settlement, land use, and subsistence in the Late Bronze Age is developed through a series of topics arising from the archaeological and paleoenvironmental data.

Contemporaneity of sites

Of 14 sites with Late Bronze Age components, nine show activity in LH III, while a subphase is not known for the other five. Even for those sites at which LH III activity can be demonstrated, a chronological span of up to 350 years is indicated (LH IIIA1 [ca. 1400 B.C.]–LH IIIC Late [ca. 1050 B.C.]). It is unlikely that all these sites were occupied for that entire period, or even that all nine sites were ever occupied at the same time. Further uncertainty is encountered in attempting to introduce into a Late Bronze Age model sites that can be dated no more specifically than to the Bronze Age. Although I find it quite likely that many of the general Bronze Age sites belong to, or at least saw activity in, the Late Bronze Age, the 26 Bronze Age loci in the lower Acheron valley cannot be presented as if they formed a contemporary settlement system. Instead, I propose that the activity loci presented in this study are representative of the types of sites and activities that took place on the landscape in the Late Bronze Age, bearing in mind that the reconstruction offered here is obviously hypothetical.

Population: sources and mechanisms of growth

An increase in settlement density in the Late Bronze Age is implied in the negative evidence for activity in the Early

THE LOWER ACHERON VALLEY IN THE BRONZE AGE

Table 9.8 Interpretive data for findspots in the lower Acheron valley by topographic class.

<i>Site</i>	<i>ID</i>	<i>Size rank</i>	<i>Total artifact count</i>	<i>Other material*</i>	<i>Assemblage variation</i>	<i>Hierarchical rank</i>
COASTAL						
Alonaki Promontory	N-1	small	11		low	4
Ayia Eleni	N-2	medium	6	A	low	3
Koumasaki	N-8	major	1497		high	2
Spilaion	N-12	major	5462		low	2
FOOTHILLS						
Kastriza	N-3	large	161	A	high	2
Koroni	N-4	medium	28		low	3
Koronopoulos	N-5	medium	101		moderate	3?
Koulia	N-6	medium	489		low	4
Koulia Grove	N-7	medium	39	O,A?	moderate	3
Pountas East	N-10	large	164		moderate	3/4
Vouvopotamos	N-13	large	601	D	high	2
Xirolophos #1	N-14	small	53		low	3
Xirolophos #2	N-15	large	183		moderate	2
Ephyra-Nekyo.	E-3	major	785	A,F,B	high	1
Kastri	E-4	major	82		moderate	2?
Ammoudia	IF-1	—	3	D	low	?
Tsouknida	IF-2	—	15		low	?
Valanidorrachi	IF-3	—	893		low	4
Kastriza Vicinity	OS-1	—	13		low	4
Pountas East Vic.	OS-2	—	79		low	3/4
Vlachika	OS-3	—	6		low	?
HIGH HILLS						
Pountas	N-9	small	278		low	4
Skepaston	N-11	small	7	F	low	4

* Other material: A = architecture; B = burials; D = daub and/or burned earth features; F = faunal remains; O = obsidian. See text for explanation of ranked categories.

and Middle Bronze Ages, and in the number of sites that have Late Bronze Age material. That an increase in population, rather than simply a dispersal of inhabitants to locations across the countryside, accompanied the proliferation of sites may be inferred from an apparent increase in the size of settlements (Tables 9.6–9.8). All of the findspots ranked “large” or “major” in size have a Late Bronze Age component, in many cases carrying a strong Late Bronze Age signature. Of 12 sites with secure Late Bronze Age material that were surveyed systematically (the other two are Dikorpho and Themelo, which were not investigated by the surface survey), the mean site size is 13.91 ha; for the five sites with no certain evidence for Late Bronze occupation (isolated findspots and off-site scatters are not included), a mean site size of 0.39 ha is obtained. Certainly, continued occupation in the Late Bronze Age of sites founded previously is likely, but the foundation of settlements on such a large scale could scarcely have taken place before the end of the Middle Bronze Age.

The source of the increased population may have been exogenous, the result of immigration or colonization, or endogenous, based on an influx of indigenous population or on increased rates of reproduction. It is doubtful that the influences on material culture from the north in the

Shaft Grave era and again in the EIA were accompanied by immigration. Rather, these influences must be seen as a movement of ideas, styles, and technologies along routes of communication through northern and central Epirus before arriving in the south. A small influx of population from a provincial Mycenaean center or centers did take place when the colony at Glykys Limin was founded in LH IIIA (after 1400 B.C.). The data from archaeological survey, however, do not support a large-scale colonization or the presence of large numbers of individuals from Mycenaean Greece.

The expansion of settlement in the lower Acheron drainage, manifested as increased settlement size, settlement number, and total population, was instead an indigenous response to the economic impact of Mycenaean presence, and thus primarily a phenomenon of LH III. The impetus for settlement aggregation near the Ionian coast was economic opportunity around Glykys Limin, through which southwestern Epirus was articulated with the Adriatic trade route. Other examples of economic opportunity as an essential factor in determining patterns of settlement and population are known from Aegean prehistory; it is worth examining briefly two of the better studied cases: the southern Argolid (Runnels and van Andel 1987), and the Cycladic island of Melos (Renfrew and Wagstaff 1982).

THE LOWER ACHERON VALLEY IN THE BRONZE AGE

Table 9.9 Comparison of population responses to economic stimuli in LH III.*

<i>Location</i>	<i>Population size</i>	<i>Number of settlements</i>	<i>Point pattern</i>
Melos	Up	Down	Nucleated—almost total aggregation at Phylakopi
Southern Argolid	Up	Up	Dispersed—intensified exploitation of marginal areas
Lower Acheron valley	Up	Up	Infilling—aggregation into large settlements and intensified exploitation of marginal areas

* Table format adapted from Wagstaff and Cherry 1982: tab. 19.2; Runnels and van Andel 1987.

In the southern Argolid, the Late Helladic period (and LH IIIA–IIIB in particular) was characterized by an increase in the number of sites and probably in total population as well. A hierarchical differentiation of settlements into villages and smaller, dependent satellites is proposed, reflecting social inequality and elite influence (Runnels and van Andel 1987: 325). The impetus for the increase in settlements and population rested, as it did in EH I–II, on economic growth fueled by access to external commercial markets (Runnels and van Andel 1987: 327). Economic opportunity fostered the intensification of agricultural production, with two main implications for demographic patterns. First, a dispersed pattern of settlement developed, as more marginal and distant patches of land were put under cultivation or otherwise exploited. Second, intensification of production in labor-intensive pursuits occasioned an increased demand for labor, which was met primarily through increases in family size, effecting an overall rise in population over time. When access to external trade and markets was interrupted, population fell back to subsistence levels, and nucleation of settlement near the best arable soils prevailed. In short, periods of dispersed settlement were times of increased population, intensification of production, and access to external markets. Nucleated settlement patterns, by contrast, reflected isolation and concern for maximizing the potential to meet subsistence requirements.

The pattern deduced for the island of Melos is in many respects the mirror opposite of that of the southern Argolid. In LH III, population size and economic activity were likewise on the increase, but a different economic impetus with distinct implications for patterns of settlement is proposed. A highly nucleated settlement configuration, featuring nearly complete population aggregation at the settlement of Phylakopi, developed as a result of economic and political intervention from Crete. The concentration of activity on the coast at a “primate settlement” (Wagstaff and Cherry 1982: 251) effectively articulated the inhabitants of Melos to external polities and markets. Periods of dispersed settlement correlated with times of lesser involvement in regional exchange systems (and, presumably, greater autonomy). Thus, the waxing and waning of economic prosperity had precisely the opposite implications for settlement distribution and population aggregation as in the southern Argolid.

The changing pattern of settlement in the lower Acheron valley reflects a population dynamic that shares similarities with both of these cases, but is identical to neither (Table 9.9). As on Melos and in the southern Argolid, population increase was an internal response to an external economic stimulus (Runnels and van Andel 1987: 329). The demand for labor to increase the output of labor-intensive industries prompted families to increase their offspring. As in the southern Argolid and contrary to the Melian case, the native Epirote population was influenced to some degree by a distant foreign polity controlling maritime exchange routes, but was not politically incorporated into it. Yet the process of settlement and population aggregation in the lower Acheron valley in LH III was also a response to unique local conditions unlike those in either of the cases just examined. Instead of a near-total aggregation of inhabitants into a single settlement (as at Phylakopi on Melos), or a dispersal of population to settlements across the landscape (as in the southern Argolid), the lower Acheron region experienced more of an infilling of the landscape: large sites of a size and scale never before seen in the area, with an impressive concentration of large villages ringing the wide bay on the Ionian coast; a number of smaller, presumably satellite, settlements; and rural activity areas occupying a wide range of ecological niches. The settlement pattern of LH III in the lower Acheron valley was less a fluctuation than an unprecedented phenomenon that witnessed the emergence of entirely new social and economic forces, among them the presence of foreign influence at a perceptible level for the first time, and social inequality expressed in a hierarchy of settlements with several tiers (see below), not detectable in earlier eras.

Settlement system in Late Helladic III

I propose that under the influence of the external economic stimulus of the Mycenaean maritime installation at Glykys Limin and articulation to the Adriatic trade route, a complex functional site hierarchy developed in which four tiers can be identified in the archaeological record (Tables 9.8, 9.10; Figure 9.7).

Major Settlement (Tier 1). The highest tier is reserved for settlements that can be considered regional anchors, i.e., those that held primacy over other population centers politically and economically. Major settlements would

THE LOWER ACHERON VALLEY IN THE BRONZE AGE

Table 9.10 Hypothetical hierarchy of settlements and other activity loci in LH III.

<i>Tier</i>	<i>Description</i>	<i>Findspots</i>	<i>Typical archaeological attributes</i>
1	Major Settlement	Ephyra	• standing architecture • size rank major • high artifact density • high assemblage variation • concentrated population in urban area • evidence of primacy over other settlements
2	Village	Koumasaki Spilaion Kastri Xirolophos #2 Vouvopotamos Kastriza	• possibly standing architecture • size rank major or large • moderate to high artifact density • moderate to high assemblage variation • dependence on major settlement but may control smaller activity loci
3	Farmstead or Small Rural Residential Compound	Ayia Eleni Pountas East ? Xirolophos #1 Koronopoulos Koroni Koulia Grove	• architectural remains uncommon; usually daub or burned earth • size rank medium or small • moderate artifact density • low to moderate assemblage variation • possibly subservient to villages
4	Rural, Non-residential Site	Alonaki Promontory Valanidorrachi Pountas Pountas East Vicinity Skepaston Kastriza Vicinity Koulia	• no architectural remains • size rank small • low artifact density • low assemblage variation • linked to activities in higher-tiered settlements • single events or non-residential activities
—	Unknown	Ammoudia Cheimerio-Kouteti Dikorpho Themelo Tsouknida Vlachika	• insufficient material or other evidence for a function to be inferred

normally feature a large concentration of population, relative to other communities in the region, in an urban setting. Typical archaeological attributes of major settlements would include standing remains of circuit walls, structural foundations, and other, often monumental, architecture; a size rank in the highest (“major”) category (see Chapter 4 for an explanation of site size rankings); high surface and subsurface artifact density; and considerable artifact assemblage variation, a subjective assessment measured by range of artifact types, ceramic fabric variability, and the presence of architecture, burials, imported objects, and other signs of the breadth of a community’s experience. Only Ephyra (Site E-3) fits the criteria for a major settlement. The variety and scope of the remains at Ephyra testify to a unique position in the lower Acheron region. The town was enclosed in a circuit wall with a monumental entrance gate, and a “lower town” extended down the gentle western slope beneath the lowest enclosure wall. The inhabitants had greater access to non-local traditions, as demonstrated by the significant percentage of imported Mycenaean pottery, the walls of

cyclopean masonry, and the three or more burial tumuli. These features suggest a level of privilege not available to other communities in the region.

Village (Tier 2). A second level in the hierarchy consists of villages that were significant population centers with several of the same attributes of the major settlements, but lacking political primacy and comparable access to foreign goods and luxury items. Villages of Tier 2 may have been satellites of the major settlement, and/or controlled smaller residential units dotting their environs. In the surface archaeological record, Tier 2 settlements were recognized by the following attributes: a size ranking of “major” or “large”; moderate to high artifact density; and moderate to high assemblage variation. Standing architecture was found at some of the settlements of the second tier. Some access to foreign goods is evident in most cases, typically in the form of several sherds from imported Mycenaean vessels. Six findspots were classified as Tier 2 villages: Koumasaki (N-8), Spilaion (N-12), Kastri (E-4), Xirolophos #2 (N-15), Vouvopotamos (N-13), and Kastriza (N-3).

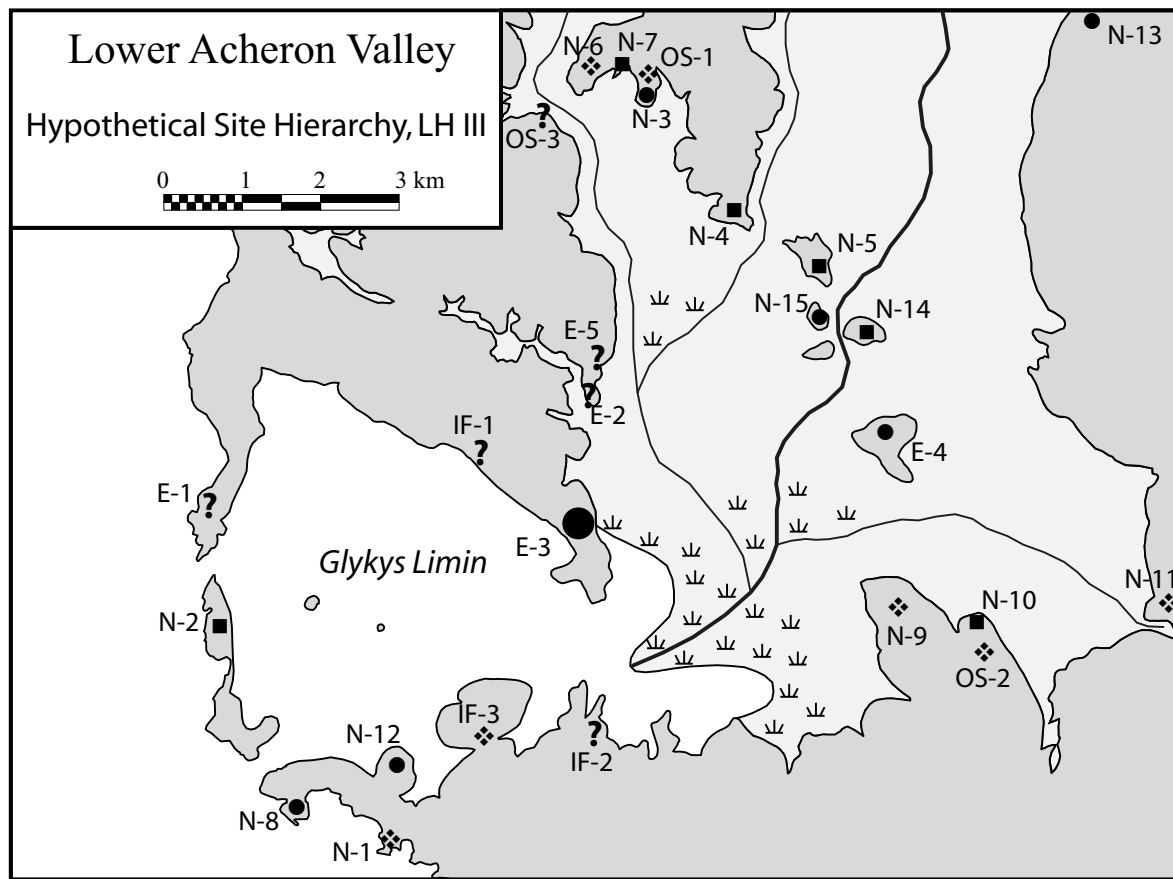


Figure 9.7 Map of the lower Acheron valley showing proposed site hierarchy.

Key: ● = Tier 1; ● = Tier 2; ■ = Tier 3; ◆ = Tier 4.

Farmstead or Small Rural Residential Compound (Tier 3). In the third tier are small residential units that differ in a number of ways from settlements of the higher tiers. In the archaeological record, Tier 3 findspots consist primarily of artifact scatters of medium to small size, moderate artifact density, and low to moderate assemblage variation. Identification as a farmstead or other small residential unit rests sometimes on architectural remains, which may consist of daub or burned earth features, stone foundations, or stone terrace walls, and other times on moderately dense, localized artifact scatters. The artifact assemblages indicate little or no access to the exotic goods that are found at larger settlements. Six findspots have been assigned to Tier 3: Ayia Eleni (N-2), Pountas East (N-10), Xirolophos #1 (N-14), Koronopoulos (N-5), Koroni (N-4), and Koulia Grove (N-7).

Rural, Non-residential Site (Tier 4). The lowest level of identifiable activity on the landscape consists in non-residential behaviors such as agriculture, grazing, tool manufacture, hunting, scouting, and casual discard. Functions of this nature were inferred on the basis of the following archaeological features: lack of architectural remains, “small” size ranking, low artifact density, low assemblage variation, and/or location adjacent or peripheral to inferred settlements. Isolated objects sometimes suggested a specific function, as for example the discovery

of sickle elements at a distance from any known residential location, or the recovery of ovicaprid bones in association with a miniscule scatter of Bronze Age pottery in a peripheral location. Some Tier 4 activity loci may represent single episodes or forays, while others may be interpreted as the sites of repeated scouting, farming, or pastoral activity. Seven findspots have been identified as Tier 4 loci: Alonaki Promontory (N-1), Valanidorrachi (IF-3), Pountas (N-9), Pountas East Vicinity (OS-2), Skepaston (N-11), Kastriza Vicinity (OS-1), and Koulia (N-6).

Several findspots did not produce enough material, or too little is known about them (in the case of sites discovered by the Ephoreia but not investigated by the Nikopolis Project), for a function to be inferred. The Nikopolis Project findspots in this category were all isolated findspots (IF) or off-site locations (OS) at which only a few Bronze Age sherds and/or a small quantity of undiagnostic lithic pieces were found. The following six findspots are classified as “unknown” in the hierarchy: Ammoudia (IF-1), Cheimerio-Kouteti (E-1), Dikorpho (E-2), Themelo (E-5), Tsouknida (IF-2), and Vlachika (OS-3).

Intraregional Patterns in the Late Bronze Age

Although Ephyra may have been a primary center for the region, localized foci of activity probably had more day-

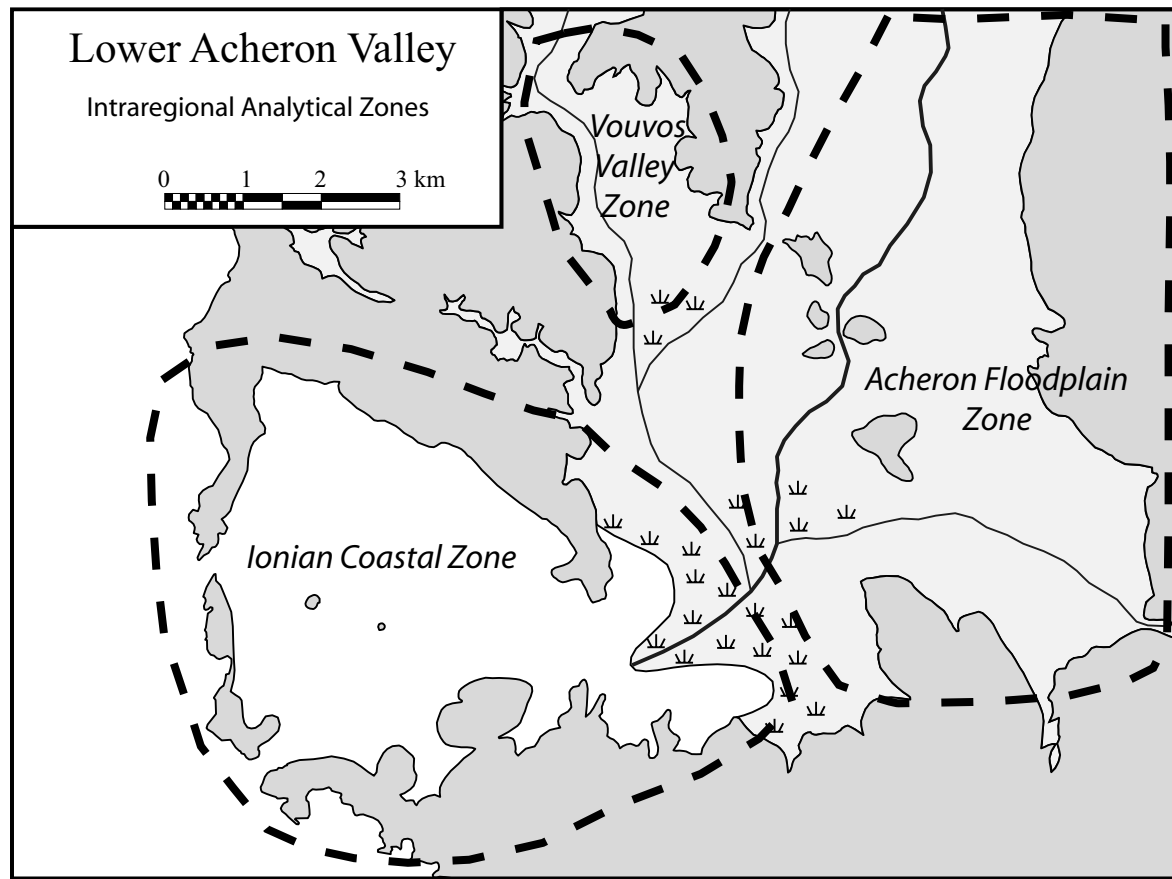


Figure 9.8 Map of the lower Acheron valley showing proposed intraregional activity zones.

to-day relevance for many inhabitants of the lower Acheron region. It will be useful to partition the study area into a number of localized activity zones in order to examine the ways in which findspots of all levels were integrated into the settlement system. Three hypothetical activity zones are identified: a coastal zone incorporating the bay and the settlements around it; a zone encompassing the Acheron floodplain and the hills within it and surrounding it; and a zone centered on the site of Kastriza and the Vouvos River valley (Figures 9.7, 9.8). The reader should note that additional information regarding all of the sites discussed in this section may be found in the site catalogue in Chapter 4.

The Ionian coastal zone

Before exploring economic and social organization in this zone, it is necessary to consider the location of Ephyra (E-3) and the many purposes it served. Ephyra was founded because the protected bay beneath it offered a foothold in the Adriatic trade route for a Mycenaean polity with aspirations to interregional commerce, and it was placed on Xylokastro hill because this was the most easily defended ridge in the vicinity. The difficulties and dangers of Bronze Age navigation bestowed great importance on this safe haven at one of few good landfalls on the Epirote coast. Other dangers must have plagued merchants plying the Adriatic route: pirates such as those implied in the Linear B archives at Pylos (Chadwick 1987: 39–42) may

have posed a threat around the Mediterranean in LH III (Stewart 1997). One advantage of Glykys Limin was its two narrow entrances (Figure 7.6), which could be monitored and defended with considerably fewer ships and personnel than most harbors. Nor should the potential for trouble from natives be discounted; the strong walls of Ephyra may have been built for protection from unfriendly native tribes as well. The reality of the need for such protection may be deduced from the site of Kastriza (N-3) in the Vouvos valley. An enclosure wall of purely defensive design, which I have argued is of Late Bronze Age date, surrounded the settlement. It would be difficult to envision piratical raids at this inland location, and therefore the danger must have been internal.

Ephyra and its hinterland also served as a resupply station at which sailors could obtain fresh water, food, and other supplies. The initial economic interactions between the founders of Ephyra and local inhabitants likely involved the acquisition of provisions for merchants taking refuge in the bay. Finally, and of particular interest to the present study, Ephyra must have been the point of contact between the local economy and the maritime trade connecting the Mycenaean world with the central Mediterranean and central Europe.

Large and small sites ringed the wide bay, and the archaeological evidence points to conceivable functions and modes of economic integration for many of them. On

the south side of the bay, the shoreline at and between the large settlements at Koumasaki (N-8) and Spilaion (N-12) was sandy and relatively flat, and the water depth was approximately 3–5 meters. This stretch of beach may have been the best location to pull up boats, and to load and unload them. The northern shore, from the Ionian coast to the ridge on which Ephyra was built, was rockier and perhaps less suitable for a port, although a gently sloping shoreline may have existed less than 500 meters to the southwest of Ephyra's citadel.

Both Koumasaki and Spilaion are large, gently sloping hillocks on which high artifact densities were encountered. At Spilaion, the 171 sherds of Bronze Age pottery come exclusively from coarse, medium- and thick-walled vessels. The heaviness of the assemblage is unique in the survey area (Table 5.3), suggesting the possibility that Spilaion served in part as a warehousing or large-scale storage facility. As a consequence of the lay of the land, it can be assumed that activity on Spilaion had a primary focus on the bay, as the hill was closed off by ascending contours to the south.

The Koumasaki peninsula produced massive amounts of flaked stone tools and debris of putative Bronze Age type, so much that only a fraction of the total could be counted, and only a fraction of those counted were collected (1,284). The scale of flaked flint processing on this site (a modest number of recognizable cores and tools were found among the overwhelming quantity of flakes) attests to intensive exploitation of some resource using flakes as tools (Tartaron, Runnels, and Karimali 1999). The discovery of several sickle elements of MH–LH type, most preserving silica gloss, shows that inhabitants were engaged either in agriculture or in gathering and processing wild plants. Either adaptation was feasible in the immediate environs: agriculture could be practiced on the low hills, e.g., Spilaion and Valanidorrachi, or in the floodplain; and wild plants grew densely on the marshy plain and on the lower slopes around it. One might envision an industry for weaving baskets and other products, or even the weaving of linen from flax, as was common in the kingdom of Pylos in LH III B (Killen 1984). An alternative interpretation of Koumasaki's flint flakes, explained in Chapter 8, is that they were employed in an industry for scraping and processing cattle hides. Spilaion also yielded impressive quantities of lithics, but these are chiefly of Upper Paleolithic type (Runnels, Karimali, and Cullen 2003), and the representation of Bronze Age flaked stone there is not yet known. The site at Koumasaki had a dual focus: its northern limit was formed by the sandy shore of the bay, and to the south an expansive view of the open sea must have made it a valuable lookout to monitor the approach of ships from that direction. A notable concentration of Bronze Age pottery and lithics on the northern half of the peninsula implies a primary preoccupation with activity on the bayside.

Economic activity on the southern shore of the bay may have involved craft specialization or surplus production to

fill a demand for supplies and trade goods at the port. The occupations or industries that are indicated (stone tool manufacture, intensive agriculture, processing of plant material and possibly hides) are labor-intensive endeavors that surely increased the demand for labor, setting into motion a reproductive increase among families in need of workers, and ultimately a rise in population that was maintained by positive feedback until demand for output decreased. At locations like Koumasaki and Spilaion, we are perhaps seeing the residue of economic activity at its maximum development; for a century or two, these large villages or industrial complexes must have been bustling centers of productive activity.

The smaller sites in the coastal zone performed a variety of services in support of the larger entities. Ayia Eleni (N-2) was a long, narrow island occupying the mouth of the bay in the Late Bronze Age. Its western face, a sheer cliff pounded by surf, acted as a natural breakwater that kept the harbor waters calm. Ayia Eleni had great defensive value, as the two narrow entrances to the bay could be guarded from the northern and southern terminal points of the ridge. The defensive scheme could be completed by defending the terminal points of the headland of Glossa to the north and the Koumasaki peninsula to the south. Two lines of wall that I have interpreted as LBA constructions (Figure 4.3) follow the natural contour of the eastern face of Ayia Eleni ridge. Because of their limited extent, it is not possible to know their original function with certainty. Since they are parallel and follow the contour, they may have been terrace walls meant to preserve the soil for cultivation of domesticated cereals and other plants. The utilization of near-shore islets of the Saronic Gulf has been related in a recent article to periods of economic expansion into marginal niches (Kardulias, Gregory, and Sawmiller 1995), and it is possible that economic expansion in LH III explains the activity on Ayia Eleni. Other functions, including defense, should not be excluded as the extant remains represent only a portion of the original walls.

Excellent grazing was available locally on the plain and in the hills north and south of the bay. The broad, relatively level terrain south of Valanidorrachi (IF-3) would have been ideal for grazing livestock in close proximity to agricultural fields. It is intuitively evident that the hill of Valanidorrachi may also have been occupied by a large and vigorous settlement in the Late Bronze Age, but at present it is heavily built over, and as a consequence, much archaeological information is not accessible. Other locations, including Alonaki Promontory (N-1) and Ammoudia (IF-1), are more difficult to interpret. Alonaki Promontory may have been visited for fishing or for scouting the sea to the south. A small structure of the Hellenistic period that was discovered there may have been a lookout post. The isolated discovery on a ridge north of the modern village of Ammoudia of a few sherds, and pieces of daub possibly in spatial association, provides little information on which to infer a particular activity or function.

THE LOWER ACHERON VALLEY IN THE BRONZE AGE

The coastal zone was distinct from other portions of the lower Acheron region because the main determinant of site location, size, and function was proximity to the economic activity focused on the bay. This zone was also distinguished by unusually large sites and high population density, as well as an intensification of production above subsistence needs to provide products for exchange. The existence of craft specialization remains a hypothetical, but likely, possibility.

The Acheron River floodplain and surrounding hills

The part of the Acheron River floodplain and the slopes and uplands surrounding it that was separated spatially from the bay was influenced by the economic activity there, but the factors determining site location, size, and function were closely related to the subsistence concerns that governed the state of equilibrium between humans and the environment before LH III. The activity areas reflect the exploitation of a variety of ecological niches supporting farming, grazing, and wild resource acquisition. Although the chronology for many of these findspots is imprecise, we may speculate that some activity loci represent intensified exploitation of less optimal or spatially marginal niches in LH III, perhaps to fill demand for increased production in response to the expansion of settlements and population.

The site of Kastri (E-4) may have been the central village of the lower plain, but archaeological evidence for its preeminence in the Bronze Age is at present lacking. An intensive urban survey of approximately one-third of the 33-ha hill known as Kastri yielded only 41 Bronze Age pottery sherds (one Mycenaean) and 41 flint flakes of plausibly Bronze Age type. Yet I have, on other grounds, designated Kastri a Tier 2 village. An important consideration is the immense overburden of historical (primarily late Classical, Hellenistic, and Roman) occupation, which included the leveling of building terraces and the construction of massive fortification walls and other structures. The spatial distribution of Bronze Age artifacts may be characterized as a thin scatter over the entire surface area of the site, suggesting that intensive use of the hill in historical times removed or simply overwhelmed once-considerable evidence of prehistoric occupation.

The advantages of the location, which explain repeated if not continuous occupation in antiquity, are many. Kastri is a high hill rising above the plain adjacent to the Acheron River, with an expansive view of the lower Acheron region on all sides. Despite the frequent wetland condition of the plain, travel to and from Kastri could be accomplished by boat on the Acheron River, or across the plain in times of flood. The acropolis, especially steep on its northern and western sides, was easily defended, and no adversary could approach the hill undetected. We have seen that some form of danger prompted the construction of defensive walls at Ephyra and Kastriza; if similar fears prevailed in the district of the plain, Kastri was the obvious location for a fortified

settlement. No Bronze Age enclosure wall has been identified, however.

The gently sloping terrain on the eastern side of Kastri would have served well for agricultural fields and limited grazing. If additional space was needed for farming and livestock rearing, several small limestone hillocks in the plain north of Kastri provided room for expansion into small satellite residential or work areas. Three of these small rises were walked by survey teams (Xirolophos #1 [N-14], Xirolophos #2 [N-15], and Koronopoulos [N-5]), and each yielded evidence of Bronze Age activity.

Xirolophos #2, less than 1.5 km northwest of Kastri, produced the densest settlement evidence, and has been designated a Tier 2 village. In 0.60 ha of systematic survey coverage, almost 200 artifacts of Bronze Age type were collected. Although time did not permit the extension of surface survey over the entire 4.4-ha area, it was determined that Bronze Age artifacts could be found on all parts of the hill. The sherd thickness data are significant: 29.9% of the sherds belong to thick-walled (> 12 mm) vessels, many of which could be recognized as large, open-mouthed pots with storage or cooking functions. The pottery assemblage from Xirolophos #2 appears representative of the normal ceramic range of a sedentary settlement at which storage was an important concern; by contrast, almost no thick-walled pottery was discovered at Xirolophos #1 or Koronopoulos.

Xirolophos #1 and Koronopoulos have been designated farmsteads or small rural residential compounds (Tier 3). At both of these locations, relatively dense but localized scatters of Bronze Age pottery were discovered along with small quantities of flint flakes. The sherds exhibit little variation in fabric or wall thickness, except that up to four sherds from imported Mycenaean pottery were recovered at Koronopoulos. The absence of sherds from large storage vessels suggests that there were no long-term storage facilities, perhaps due to seasonal rather than permanent occupation, or because these hillocks were special purpose sites dependent on the main residential settlement at Kastri or Xirolophos #2. Koronopoulos and Xirolophos #1, although small, together comprise an area as large as Kastri, and thus offered ample space for expanded farmland with abundant fresh water available close at hand in the Acheron and Kokytos rivers. These sites are perhaps best explained as small satellite settlements of Kastri on which small farmsteads were placed.

Another large village overlooking the plain was discovered several kilometers north at Vouvopotamos (N-13) on the eastern side of the valley. Extensive roadwork in anticipation of a major aqueduct exposed a dense concentration of buried artifacts eroding from the road cuttings. Geomorphological and archaeological evidence was adduced to demonstrate that agriculture was practiced on the hillslope in the Bronze Age (see site entry, Chapter 4). Abandonment or poor maintenance of the cultivated

slopes resulted ultimately in the stripping of the soil in sheet flows. Vouvopotamos exhibits high artifact density; considerable assemblage variation, expressed in diverse fabrics and the presence of pseudo-Minyan and Mycenaean wares; and a full range of vessel thicknesses—all attributes that indicate a substantial sedentary village based on farming or mixed farming and herding for subsistence. This village may have been the focus of its own economic hierarchy, with dependent satellite sites analogous to those conjectured for Kastri, but because its location lay near the limit of the Nikopolis Project study area, the periphery could not be adequately explored.

Examples of Bronze Age activity loci were also found on the lower slopes and foothills of the hill country enveloping the Acheron plain. Lying just above the level of the plain 2 km south-southeast of Kastri, the site of Pountas East (N-10) may have been a small residential unit of Tier 3 or a special purpose site of Tier 4. For several reasons, Pountas East would appear to have been a poor location for a permanent settlement. The site was poorly endowed with soil, and as a consequence could scarcely have supported an agricultural community. Situated above the deepest spot in the backswamp of the Acheron levee system, the site looked out over a perennial wetland—possibly a seasonal lake—that could be envisioned as stagnant and perhaps malarial. Furthermore, the position could never have been defended from attack.

The inferior situation of Pountas East is belied by clear evidence of repeated occupation from prehistoric times to the present. This long history of exploitation is best understood in terms of the value of the location of Pountas East for a special purpose site. For a larger entity like Kastri, the maintenance of a small settlement utilized episodically or seasonally made sense as a way to intensify exploitation of marginal niches. In order to supplement grazing land, a small encampment from which livestock could be led into the surrounding hills and uplands might be founded at the closest point of transition between the plain and foothills zones. Another important function might have been the gathering and processing of wetland resources. Weeds, willows, and rushes provided building material for wattle-and-daub structures, and weaving material for baskets, mats, and cloth. Wetland vegetation could also be fashioned into traps, nets, and lines for fishing. The heavy backswamp clay could be mined for use in manufacturing pottery and mudbricks. Pountas East may, therefore, have been a valuable satellite dependency to Kastri or some other large village in the Late Bronze Age, playing a role in livestock rearing and furnishing a range of useful products.

The livestock in question may have been led out to graze in pastures at locations similar to Pountas (N-9), a Tier 4 special purpose site. A small concentration of K II/III sherds and flaked stone was discovered at Pountas, located to the west and upslope of the Pountas East site. Among the flint pieces was a fine, hollow-notched arrowhead of MH-LH type (Figure 6.4a). Almost no prehistoric material was

found elsewhere on the long Pountas ridge. The assemblage of sherds and flaked stone suggests short-term exploitation of the ridge for herding and/or hunting.

In the high hills southeast of the lower Acheron plain, a deposit of Bronze Age material was discovered in a stratified road cutting near the modern village of Skepaston (N-11). In this peripheral location at over 300 masl (“concealed” from view, as the name of the village implies), a prehistoric stratum contained seven sherds from K II/III vessels, and eight animal bones, including an ovicaprid tooth. In the modern context, this place is isolated and nearly waterless in summer, but plentiful winter rainfall is indicated by precipitation data for Ano Skaphidoti, at the northern end of the same ridge (see Table 7.2), and a few springs, dry during our July visit, were noted. Skepaston may have been utilized, as suggested by the faunal remains, for grazing sheep and goats, providing an excellent example of localized vertical transhumance linked to settlements in and around the plain.

An interesting analogy, in environmental terms, is found elsewhere in the Nikopolis Project survey area. The site of Galatas (N-19), situated at almost precisely the same elevation in the Thesprotiko valley (Figure 4.1), is similarly peripheral, but springs are more numerous and still issuing in summer. Perhaps for this reason, the evidence at Galatas points to a permanent settlement occupied repeatedly in prehistoric and historical times. In a stratified road cutting, the remains of a modest dwelling with stone foundations and large chunks of daub were found in association with sherds and stone tools, among which two Mycenaean sherds and a sickle element of MH-LH type were identified. A calibrated radiocarbon date ca. 1400 B.C. was returned from a sample of charcoal from this stratum. The Galatas site differs from that near Skepaston in that it was a sedentary upland settlement likely engaged in farming and herding, rather than a locus of short-term pastoral activity.

Findspots encountered in and around the Acheron floodplain manifest multiple levels of the proposed hierarchy of settlements and other activity areas. Late Bronze Age inhabitants had the whole of the plain and its resources—water, fish, fowl, wild plants, clay, and so forth—at their disposal, and the slopes and hills upon which to cultivate their domesticated plants and raise their livestock. In short, this was a landscape exploited for a wide range of resources in diverse ecological niches. In view of the evidence for population expansion in LH III, it is to that period that we should attribute the broadest territorial exploitation of the countryside, so that even though assignment of precise chronologies to the findspots is problematic, we may feel confident that activities analogous to all those identified in the surface archaeological record took place at that time. The location of settlements was influenced most profoundly by proximity to water and other resources, but an expansion of exploitation may have been initiated in LH III, when

the need arose for additional agricultural fields, grazing land, and wild resources.

The Vouvos River valley zone

A small focus of Bronze Age activity centered on the fortified settlement known as Kastriza (N-3) in the lower Vouvos River valley west of the Acheron plain. I have argued that the fortification walls that enclose just over 2 ha of the 5.4-ha hill of Kastriza are of Late Helladic, rather than Classical/Hellenistic, date as previously reported (Chapters 4, 8). The surface survey data indicate that the Bronze Age was the primary period of occupation at Kastriza, and a broad range of artifacts that includes pseudo-Minyan, Mycenaean, and orange-red pottery reveals a concentration of activity in the Late Bronze Age and into the Early Iron Age. In the Bronze Age, the Vouvos plain bordering the hill on the east, west, and south consisted of floodplain deposits, including backwater of the Vouvos River system, which would have been inundated by a seasonal lake and/or deep marsh throughout the year. The fact that the stone fortification wall, which uses cyclopean masonry techniques and attains a thickness of three meters, does not form a complete circuit on its southern side is explained by the extreme difficulty of attacking the site from the deep wetland below.

The local environmental setting also suggests functions for Kastriza and several findspots in the vicinity. Kastriza has been designated a Tier 2 village in recognition of the carefully built wall, the rich artifact assemblage, and the site's obviously residential aspect. The hill that Kastriza occupies is nonetheless rather small (5.38 ha), with little space for farming or grazing to support even a minimal population, with the result that it must be assumed that the environs of the site were exploited for resource procurement and other subsistence activities. The Vouvos floodplain provided a suite of resources similar to those obtainable in the Acheron River floodplain: fresh water from the river, fodder for cattle and sheep, wild plants for weaving and construction of dwellings, clay for ceramics and mudbricks, and so forth.

Other findspots in the environs seemingly represent the exploitation of diverse niches by the inhabitants of Kastriza. Adjacent to Kastriza to the north, a gentle slope that provided the only direct approach by land to the settlement would have been an ideal location for agricultural fields. On this slope, referred to as Kastriza Vicinity (OS-1), a thin scatter of sherds and flint flakes was discovered, and interpreted as off-site activity related to the adjacent settlement (and thus designated a Tier 4 non-residential location). A small satellite settlement may have existed at Koulia Grove (N-7), a level tongue of land a few hundred meters northwest of Kastriza. Raised a few meters above the plain, this patch of land may have been occupied at times by a farmstead conveniently placed to exploit resources of the river and the floodplain. Several stone building foundations were detected on the surface of this

site, but it was not possible to determine their date. The solitary piece of obsidian found in the Nikopolis Project survey, a blade segment, was found at Koulia Grove. This location is interpreted as a Tier 3 residential unit dependent on the settlement at Kastriza. Ample grazing for livestock kept by the community at Kastriza was available in the moderately steep hill country to the east and west. One such location was the long, narrow ridge of Koulia (N-6). Near the peak of this hill (96 masl), a concentration comprised chiefly of flint flakes, but also including a small number of sherds from coarse pottery of Bronze Age type, was discovered. Much of the lithic material, totaling almost 500 pieces, must predate the Bronze Age. Four arrowheads similar to examples of the Late and Final Neolithic in central Greece were found among the lithic debris, and an interpretation of the location, with its expansive view of the area, as a hunting lookout at the Neolithic–Bronze Age transition is indicated (see site entry, Chapter 4). This interpretation is supported by the existence of a large polje (now drained) extending for more than a kilometer to the north of Koulia hill at the locality Kalosykies, east of the modern village of Tzara. Such large-scale solution depressions typically lack natural outlets for water, inducing the formation of seasonal lakes and rich wetland vegetation. Bronze Age activity was discerned on a slope overlooking the remnant of a large polje at Cheimadio (N-18), several kilometers south of the Acheron River valley, and a still-active polje can be seen at Kalodiki, located north of the of the survey area near the village of Morphi (Figure 7.2). As reliable sources of water and wild plants and animals, poljes offered important resources to humans. The arrowheads of presumed Neolithic date found at the summit of Koulia hill may have been left behind by hunters scouting animals that came to drink and browse at the polje, and the scantier Bronze Age material may reflect sporadic use by herders and hunters.

The factors influencing site size, location, and function in this small corner of the Vouvos drainage approximate those noted for the findspots in and around the lower Acheron plain. The pattern of a substantial settlement of the second tier supported by a number of satellite settlements and special purpose loci is similar, as is the discernible focus on exploiting diverse ecological niches to ensure subsistence success. Communication with the lower Acheron plain could be accomplished by boat on the Vouvos River, which was perennial and probably flowed closer to Kastriza through the middle of the plain, or on foot by skirting the western foothills of the valley. The Vouvos River valley may in fact have been an important inland route connecting the Mycenaean centers at Ephyra and in the Parga area (see discussion of communication below).

The position and nature of the settlement at Kastriza raise intriguing questions about the community's function and association with Mycenaean activity around Glykys Limin. On present evidence, Mycenaean interest in Kastriza is ambiguous. Despite the clear connection established by

the cyclopean fortification wall, only a few sherds believed to be from provincial Mycenaean vessels were found among hundreds of pieces of local coarse pottery. Yet even the scarcity of Mycenaean pottery is not particularly informative, since at Ephyra the yield from surface survey was not much greater, and only through excavation do we know that Mycenaean pottery was relatively common there. As I suggested in Chapter 8, Kastriza may have served as a node or meeting place where products of the hinterland, including raw materials such as amber having arrived via long overland routes, were exchanged for Mycenaean metal and ceramic goods, and other unknown items. The walls of Kastriza may attest to the perils of such early interactions. In this context, mobile pastoralism may fit as a link between the coastal lowlands and the highlands of the interior. The excellent resources, and particularly the large *polje*, in the neighborhood of Kastriza may have attracted pastoralists in search of lowland winter pasture. This is one point where migrating shepherds could have emerged into the Vouvos/Acheron system from passes leading through the mountains to the north between Paramythia and Parga. Perhaps exchange developed from ancient, symbiotic relationships between lowland and highland dwellers. At a considerable remove from the coast, Kastriza was an ideal extension of the “neutral zone” that Polanyi envisioned for the port of trade.

Settlement Before and After LH III

Land use in the lower Acheron drainage during approximately two centuries (ca. 1400–1200 B.C.) of active Mycenaean influence reflected an expansion of economic activity to all parts of the landscape (Figure 9.7). With economic opportunity on the coast as a catalyst, it is likely that an initial influx of population from the hinterland filled in many habitable locations with settlements, bringing about the need to intensify exploitation of marginal or less optimal niches that were not utilized previously. In practical terms, the opening up of new zones for exploitation may have required considerable efforts to clear land on heavily wooded slopes and uplands at a distance from settlements in and around the plain. Peripheral locations, for example the putative herding site near Skepaston, may have been used extensively in the Late Bronze Age. This process altered the stable relationship that had prevailed between humans and the natural environment since the beginning of the Bronze Age. Previously, the establishment of small farming and herding as technologies of the *longue durée* had promoted a state of equilibrium in which plentiful resources were available for a modest population. In the time before LH III, there were perhaps two tiers in the hierarchy of settlement. The existence of a primary settlement comparable to Ephyra, with some measure of political and economic influence over sites around the region, is inconceivable before the arrival of the Mycenaean. It is in fact not certain that villages of the second tier existed before the Late Bronze Age, because concentrated centers of population cannot yet be dated to the earlier phases of the Bronze Age.

One or two levels were added to the top of the hierarchy once the region was articulated to external polities and markets, with potentially far-reaching consequences for social relations. In the coastal zone, traditional systems of allegiance to households or small clans may have been supplanted by the transfer of fealty to a village-based elite, consisting of foreigners or dominant native lineages. The signs of social inequality are conspicuous in the Late Bronze Age, in the marked differences in the size and complexity of settlements, in differential access to exotic goods, and in high-status burials such as the tholos tomb at Kiperi and the tumuli at Ephyra. It is reasonable to assume that these phenomena are the material correlates of a novel social hierarchy, or, as Soueref (1986: 168–172) suggests, the emergence of distinct social classes in the coastal zone (although I would dispute the formation of true social classes). These developments stand in stark contrast to the absence of evidence for social differentiation before the Late Bronze Age.

After the demise of the commercial enterprise at the coast, which seems to have taken place in LH IIIC, systems of subsistence and land use appear to have returned to a state similar to their pre-Mycenaean configuration. It is impossible on present evidence to know whether the Mycenaean colony experienced a lengthy decline, or collapsed as a consequence of some emergency that affected the founding polity or interrupted seaborne trade. Internal evidence from the Pylos Linear B archive, together with the apparently sudden destruction of the palace there ca. 1200 B.C., suggest that an attack by sea was anticipated (Chadwick 1987: 39–42). On the other hand, a flowering of provincial Mycenaean culture in western Greece and the Ionian Islands in LH IIIC shows that interregional contact was not overthrown in a single, violent upheaval. The solution may depend on the course of events that unfolded in the turbulent times of the late palatial period, and their effects on peripheral settlements whose fortunes were in some way tied up in interregional economic interaction. The timing of the effects on local enterprise must be gauged with more precise chronological information from Ephyra.

Continuity of occupation at a reduced level in the Early Iron Age is noted at six of 14 Late Bronze Age sites (Table 9.6). It is worthy of note that EIA activity is focused primarily on the Tier 1 and Tier 2 LBA village sites, from which we may infer two significant patterns: first, the villages that arose as important local centers remained so in the EIA; and second, it is possible that a pattern of settlement not before witnessed in the lower Acheron region arose in the EIA—a nucleated pattern in which a reduced population retreated to a limited number of settlements. On the basis of the survey data, a hypothetical reconstruction of diachronic changes in the pattern of settlement from the beginning of the Bronze Age to the Early Iron Age in the lower Acheron valley may be proposed (Table 9.11).

THE LOWER ACHERON VALLEY IN THE BRONZE AGE

Table 9.11 Diachronic pattern of late prehistoric settlement in the lower Acheron valley.

<i>Chronological span</i>	<i>Point pattern</i>
Bronze Age prior to LH III	Dispersed settlement in small, mixed farming/herding communities; population low
LH IIIA–LH IIIB/IIIC	Infilling of the landscape: aggregation into large settlements and intensified exploitation of marginal zones; population high
Early Iron Age	Nucleated settlement: moderate population concentrated in a limited number of the important LBA settlements

The Late Bronze Age: Reconstruction of Subsistence Strategies and Land Use

The settlement data from the valley indicate neither a strongly nucleated pattern nor demographic pressure on land and water before LH III, and perhaps not even in the heyday of Mycenaean influence in the coastal zone. The general picture before the establishment of the Mycenaean colony is of small, clan-based settlements dotting the low hills and slopes of the lower Acheron drainage. Population density remained well below the carrying capacity of the land, and so there cannot have been serious resource pressure on agricultural land, pasture, or water. An economy based on mixed farming and herding was ideal for subsistence: families herded sheep and cattle in the plain, farmed the small hills and lower slopes in and around the river valley, and ran their goats and pigs on the slopes and wooded uplands. A mobile subsistence strategy including localized vertical and horizontal movement according to seasonally available resources fits the archaeological and environmental evidence that is summarized above.

The case for long-distance transhumance involving residents of the lower Acheron region is relatively weak. A mild climate at all seasons and plentiful, perennial water sources eliminated the need to migrate between summer and winter pasture. It is plausible, nonetheless, that the lower Acheron drainage was a winter grazing area for highland communities in some kind of reciprocal arrangement. Local resources were sufficient that winter grazing could have been shared by agreement with pastoralists from the hinterland, even if the two populations remained physically separate. Zagarell (1989) proposed the emergence of a Chalcolithic highland pastoral economy in southern Iran from an earlier, mixed farming and herding economy of the Neolithic period. Ties to lowland communities continued, based on economic relationships of dependence, symbiosis, or even predation (Chang 1994: 359). Although Epirote sites of later prehistory have generally been interpreted in this light, developments in Greece at approximately the same time may represent more extensive mixed farming and herding with a greater focus on livestock, rather than a shift to specialized pastoralism, which Halstead (2000: 117–123) continues to reject for prehistoric times. Only at the site of Ephyra and its environs

in LH III did there arise political and economic conditions that might have favored long-distance transhumance driven by a vast state-controlled monopoly such as the wool industry inferred by some at Mycenaean Knossos. Yet there is simply no credible evidence for the necessary political oversight, or for animals on that scale in Epirus.

Households must have been the primary unit of production and consumption throughout the Bronze Age, but they may have been partially superseded at the time of Ephyra's ascendancy in LH III. A dependable resource base and generally available land and water favored the household as the fundamental economic unit. The intimate association of arable fields and livestock rearing in proximity to the locus of residence is consistent with household management. Economic decisions regarding the mix of domesticated and wild resources exploited, labor allocations, and scheduling of subsistence probably fell to clans composed of related or otherwise allied families. Decisions could be taken in common, and risks and benefits shared. As Halstead (1989: 68–70) has pointed out, the subsistence economy has a “normal surplus” in the sense that agriculturists routinely aim for production above that required for subsistence in the knowledge that the harvest must yield enough even in poor years to insure survival. Excess production realized in good years could be stored against poor future harvests, shared out among less fortunate families in the clan, or traded outside the clan for desired commodities or future considerations (“social storage”: O’Shea 1981). Since some stored commodities, including cereals, may spoil before they can be used, excess produce may be fed to livestock and thus “stored” in them. Although decisions were taken at a level above the immediate family, the small, relatively egalitarian clans were far different from the partly managed economies and the broad control over the productive lives of unrelated individuals that are implied in the Linear B archives of the Mycenaean palaces.

A conspicuous increase in settlement size and density is discernible in the Late Bronze Age, and evidence for widespread agricultural and pastoral pursuits becomes perceptible. The infilling of the low hills in and around the plain with sedentary settlements likely occasioned a strategy of intensively managed farming of arable plots, in and around which households grazed sheep and cattle.

Localized vertical transhumance was probably practiced, with the dual advantage of exploiting ecological niches in which goats and pigs prospered, and conserving resources of the plain for sheep and cattle. Excursions into the hills and upland zones surrounding the plain were presumably of short duration rather than seasonal, so that manure would not be lost to agricultural fields.

Resource stress in the Late Bronze Age?

It is appropriate to wonder whether the intensification of economic activity during LH III placed a dangerous level of stress on the region's natural resources. I believe that if resource stress and instability occurred, they should be sought not during the period of economic intensification in LH IIIA–IIIB, but instead in the time following the decline or collapse of maritime activity in the coastal zone.

A percentage of the population of the villages surrounding Glykys Limin, both native and foreign, must have been engaged in full- or part-time craft specialization rather than subsistence production. It thus fell to others, particularly those inhabiting the countryside inland from the coast, to produce a surplus of food, which could be exchanged for textiles, exotic goods, alternate foods (e.g., fish), and other items that were manufactured in the coastal villages or arrived by sea. Two responses to increased demand for subsistence goods can be inferred from the archaeological record: a rise in population to augment the labor supply, achieved by immigration from outside the valley or by increased family size; and expansion into wider, more diverse ecological zones in order to intensify production. As long as the flow of products between the coast and the settlements in and around the plain continued uninterrupted, the favorable natural environment probably enabled the larger population to be supported.

Disruption of the reciprocal arrangement between the coast and the plain as a result of local conflict, interruption of maritime activity, or other disturbance would have had potentially dire consequences for the stability of the ecosystem and the local economy. Much depends on whether maritime activity collapsed suddenly in response to interruptions in seaborne trade, possibly in the tumultuous years at the end of LH IIIB, or instead suffered a protracted decline due to decreased external supply or demand, or a series of debilitating conflicts with pirates or natives. A sudden breakdown of trade should have had more severe economic effects, because no period of adjustment to changing fortunes was possible. A large segment of the population not engaged in subsistence production would be forced to seek subsistence in a countryside that was already intensively exploited, or to leave the region altogether. As the supply of imported and manufactured goods for trade from the coastal zone dried up, subsistence producers in the plain had little incentive to share their surplus, and displaced individuals and families had little to offer in exchange. If the new economic and social arrangements had broken old bonds of obligation among

families, there may have been no social safety net. It is conceivable that conflicts over land for fields and pastures took place between established farming/herding communities and those abandoning the coastal settlements, creating stress on resources and social instability. It is even possible that natives ousted the Mycenaean community by withholding food and laying siege to the walled citadel at Ephyra. The perceived dangers that prompted the fortification of Ephyra, Kastriza, and probably Kiperi may have become realities.

These doomsday scenarios may overdramatize a gradual process of decline in which merchants' visits were not frequent enough to sustain the operation of a trading station, maritime routes were changed, or the decline or abandonment of the founding polity removed the impetus for the station's existence. Whether gradual or abrupt, the disappearance at the end of the Bronze Age of this unparalleled economic activity forced demographic and economic adjustments that are visible in the archaeological record. Many sites occupied in the Late Bronze Age were evidently abandoned, and a nucleation of the remaining population into the important settlements of the Late Bronze Age is indicated. Significantly, there is little evidence that the more marginal locations were exploited in the Early Iron Age, implying a reversal of the intensification of production that accompanied the unique economic conditions of the latter stages of the Late Bronze Age. From the survey data we may also infer a general decrease in population size, as families restored controls on reproduction, and many individuals and households left the area entirely. Ultimately, there was a return to a state of equilibrium with the environment, in which the balance between human population and natural resources was restored.

Communications and Interconnections in the Mycenaean Period

The contemporary Mycenaean sites at Ephyra and Kiperi (E-20) near Parga may have been intimately associated, possibly through the intermediate site of Kastriza. Ephyra and Parga are coastal sites, separated by 15 km of Ionian seacoast. The chronological range of the Mycenaean material at the two sites is similar: LH IIIA to LH IIIC at Ephyra; and LH IIIA to LH IIIB and possibly LH IIIC at the Kiperi tholos and its surroundings. Little is known about habitation at Kiperi: only the tholos tomb is dated unquestionably to the Late Helladic period, and there is some question about the existence and location of an accompanying settlement (see Chapters 4 and 8 for discussion). Some of the remains of walls and foundations near the tholos tomb appear to be of Late Bronze Age type, but there has been no attempt to survey or date them, nor have the environs of the site ever been explored systematically. The intervisibility of the two settlements, however, is a strong argument for a close relationship between two pockets of Mycenaean presence in possibly hostile territory. The occurrence, unique in Epirus, of a

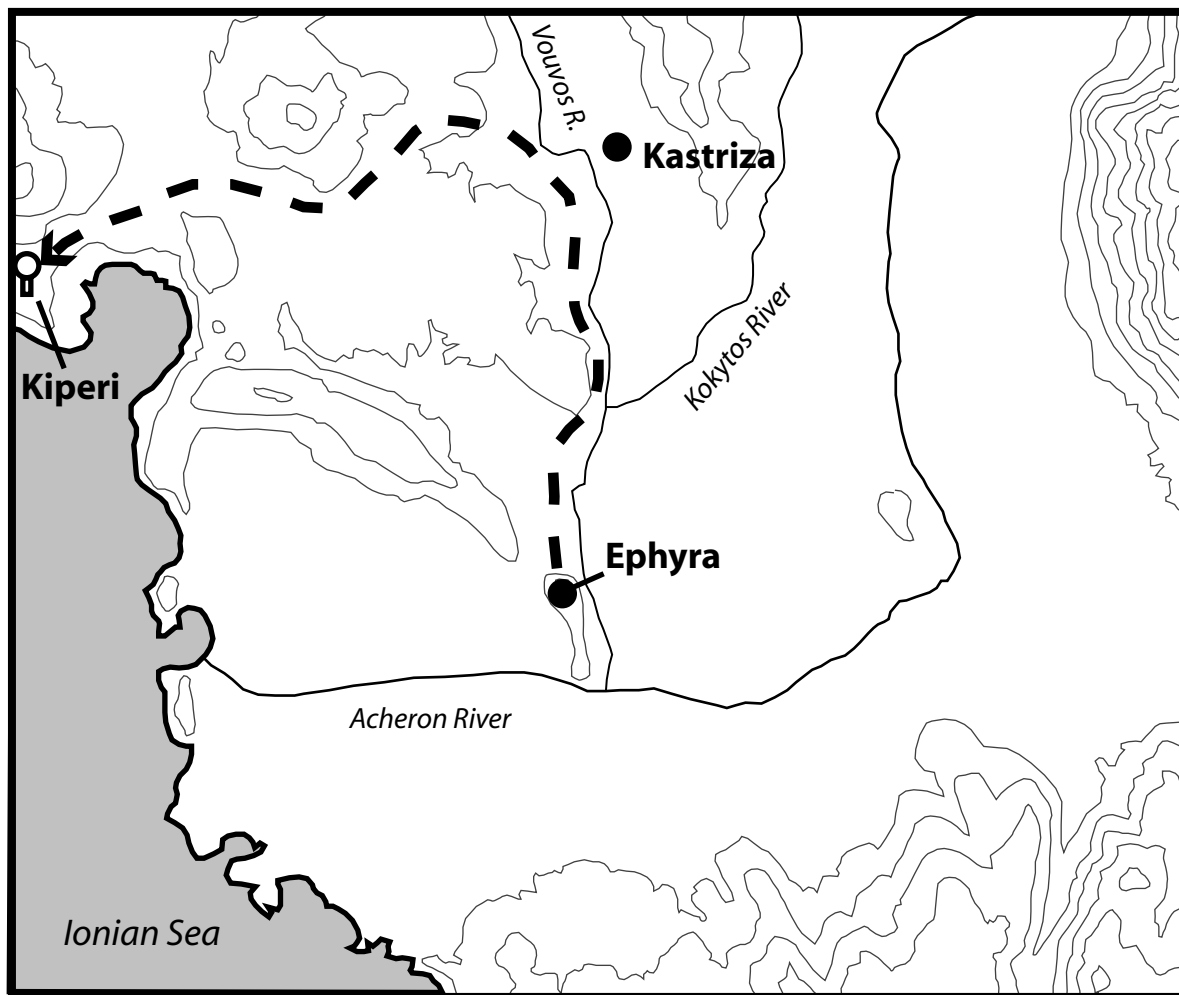


Figure 9.9 Hypothetical inland route between Ephyra and Kiperi, passing by Kastriza.

finely executed tholos tomb containing imported Mycenaean fineware, attests to the presence of an elite family. For reasons explained in Chapter 8, I believe the tholos tomb must have been built for a family of elite immigrants, and not for a local chief and his family.

Communication between the two areas undoubtedly took on several forms. Instantaneous communication could have been effected by the use of fire, smoke, or other visible signal. The transmission of messages concerning the approach of ships or land forces may have provided a vital security system. Travel between the settlements could be accomplished by sea or land. The short voyage along the coast must normally have been relatively easy, since it did not require navigation on the open sea. In conditions of windlessness or rough seas, however, it made more sense to take an overland route. It should be noted that at any given moment, the threat of pirates or hostile local tribes may have made travel by land or sea dangerous. A sensible response was to have alternative routes and methods of communication.

It is in light of a possible land route between Kiperi and Ephyra that the location and character of the settlement of Kastriza may be partially explained (Figure 9.9). Traveling on foot from Ephyra, one could take an inland route by

skirting the western slopes of the Vouvos River valley. The fortified hill of Kastriza lay just less than six kilometers to the north at the head of a constriction in the valley where Koulia hill pinches the floodplain before it opens once again to the south. From Kastriza, one would follow the Vouvos valley to the northwest for 2.5 kilometers before turning west from the Kalosykies polje toward the modern village of Morphi, 3.5 kilometers distant, which overlooks the still-active Kalodiki polje (Figure 7.2). The final leg, covering five kilometers, involved turning south toward the coast, and finally west again toward Lichnos Bay. The entire journey negotiated 17 kilometers, at times in somewhat rugged terrain, and must have taken the better part of a day. One advantage of this route is that movement along it could not be detected from the coast or the sea. Kastriza, with its strong evidence for Mycenaean influence, may have served as a way station on the inland route.

Normal movement in and around the lower Acheron valley was achieved primarily on foot or by boat. The Acheron, Kokytos, and Vouvos rivers were navigable for the entire length of the floodplain, and boat travel must have been an efficient way to move north to south through the region. In the spring, small boats could perhaps navigate the swamps and seasonal lakes that occupied the floodplain. Land paths will have skirted the foothills on all sides of

the valleys of the Acheron and its tributaries. Some settlements or activity areas were likely occupied for their position on major arteries in and out of the valley. The site of Pountas East (N-10), founded just above the marshy plain on the eastern slopes of the Acheron valley, provides a likely example: although the location was poor in terms of arable soil, defensibility, and pleasantness of environment, it was occupied repeatedly in prehistoric and historical times. The position of the settlement on a suitable path leading in and out of the southeastern corner of the valley may explain its longevity.

General Conclusions

It is not my intention to portray the lower Acheron valley as a Garden of Eden from which an easy existence could be wrested with minimal effort. Bronze Age agricultural and pastoral ways of life were anything but easy. I wish to convey instead that the natural environment of the region held broad subsistence potential for human settlement. Two fundamental characteristics of the local ecology, a mild climate and plentiful water in all seasons, permitted year-round occupation and a wide spectrum of subsistence choices. The chief limitation encountered by inhabitants was the unsuitability of the floodplain for settlement. It is hardly surprising that settlement should have been concentrated on the low hills and slopes in and around the floodplain, in a position to exploit the many resources of the lowlands and adjacent uplands, yet safe from the flood waters of spring.

For the better part of the Bronze Age, the relationship between humans and the environment remained in a state of equilibrium: the stable resources of the valley and the technologies used to exploit them were sufficient to smooth out short-term climatic fluctuations. A general strategy of multiple resource exploitation, in which farming and herding were supplemented by hunting, gathering, and fishing, provided the flexibility to withstand short-term shortages in specific resources. The admittedly imprecise settlement data suggest that for the entire Bronze Age before LH III, the level of population remained well below the valley's carrying capacity, reflecting not so much any local condition as a general trend of low population throughout Epirus in that expanse of time.

A single medium-term impact, the foundation of a Mycenaean trade colony centered on the settlement at Ephyra, had detectable consequences for material culture, and for structural elements of local society and economy. In response to the economic stimulus of a port on the Adriatic trade route, there was an influx of population to the coastal area, where large villages grew up along the bay on which the maritime station was founded, and an intensification of production in the hinterland, as previously marginal niches were exploited in an effort to generate a surplus of agricultural and pastoral products. The survey data indicate that one and perhaps two tiers were added to the settlement hierarchy in LH III, reflecting conditions of

social and functional differentiation, and that both numbers of settlements and overall population increased.

At some point in time, probably in LH IIIC (the chronology remains imprecise), the maritime colony either collapsed or suffered a terminal decline, with the result that the novel social and economic structures also disappeared. Data from the surface survey indicate a readjustment in the Early Iron Age of population and economic activity to pre-LH III levels, but apparently with a new pattern of settlement: instead of a dispersal of settlements and activity areas across the landscape, a nucleated pattern prevailed in which the more important village sites of LH III were reoccupied.

Prospects for Future Research

Although the archaeology of Epirus remains underdeveloped, the success of the Nikopolis Project in demonstrating the value of landscape archaeology in approaching problems of a general nature (e.g., diachronic activity on the landscape for all periods in antiquity) and concerning specific research issues (e.g., the present study) signals an auspicious development in the archaeological study of the region. The techniques associated with landscape archaeology in Greece, notably intensive surface survey, paleoenvironmental reconstruction, remote sensing, and spatial analysis using Geographical Information Systems (GIS), were applied profitably to the Epirote countryside. Evaluation of the results of the Nikopolis Project will allow subsequent projects to continue to develop the procedures best suited to the unique conditions of the Epirote landscape.

Much remains to be done in the study of the Bronze Age in Epirus. It will be obvious to the reader that the lack of a well-defined chronology limits severely the amount of information that can be extracted from surface and subsurface sites of the Bronze Age. The refinements I have suggested are merely the beginning of a long process of careful study that awaits a number of scholars. I find it inescapable that real progress depends on the identification, excavation, and publication of well-stratified sites with deposits spanning the Bronze Age.

A few of the sites discovered in the surface survey ought to be examined for their potential to provide stratified deposits. Two sites exposed in road cuttings, Skaphidaki (N-17) on the Ayios Thomas peninsula, and Galatas (N-19) in the Thesprotiko valley, preserve records of repeated if not continuous occupation in late prehistory, and appear to be *in situ*. A third site, Kastriza (N-3) in the Vouvos valley, may offer subsurface deposits of the Bronze Age, and insight into the dynamics of the Mycenaean presence in southwestern Epirus. There is no way to know, at present, if stratified deposits are preserved at Kastriza. Another intriguing possibility, particularly in view of Mycenaean presence in Epirus, would be a landscape archaeology program focused on the vast delta and floodplain of the Kalamas (Thyamis) River. Geomorphological analysis of

the Kalamas mouth and delta could reconstruct the coastal configuration through time, perhaps restoring another landfall on the Adriatic route in Mycenaean times. Mycenaean objects found in burials and settlements in northern Epirus may have come ashore at the Kalamas mouth, and the Kalamas basin, which is largely unexplored, may yield a wealth of new sites and features of Bronze Age date. Finally, as suggested above, a series of surveys and small excavations stretching from the coast to the interior highlands would reveal a fuller range of Bronze Age activity upon these diverse landscapes, allowing us finally to address questions about subsistence practices, land use and mobility, and the integration of communities across the region.

The present work is a modest contribution to Epirote Bronze Age studies, but one that I hope will stimulate other scholars to design and carry out new research. With renewed efforts targeting the many deficient realms of our knowledge, we stand to learn much about how the prehistoric Epirotes lived.

Appendix: Bibliography of Bronze Age Sites in Greek Epirus

<i>Site name</i>	<i>Publication (see general Bibliography)</i>
Aetos	Dakaris 1972a: 66; Papadopoulos 1976: 316, 318
Ammotopos	Andreou 1994: 243
Anthochori	Vokotopoulou 1968: 293, pl. 237; 1969b: 198, fig. 8, pl. 28; 1972: 116; Papadopoulos 1976: 277, 311–312, pl. 18; Soueref 1986: 35, figs. 6, 24, 54
Aristi	Andreou 1994: 238
Arta	Dakaris 1961/2: 196 n. 39; Hammond 1967: 315; Vokotopoulou 1972: 116; Papadopoulos 1976: 282, 293, 298–302; Soueref 1986: 68–69
Asprochaliko	Dakaris 1971a: 29–30; Papadopoulos 1976: 274
Avlotopos	Dakaris 1972a: 66; Papadopoulos 1976: catalogue
Ayia Kyriaki	Vokotopoulou 1968: 293, pl. 237; Papadopoulos 1976: 311, pl. 18
Ayioi Anargyroi	Andreou 1994: 240
Ayioi Apostoloi Pedinis	Blackman 2001
Ayios Georgios (vicinity)	Dakaris 1971a: 29; Papadopoulos 1976: catalogue
Ayios Ioannis (Nekyomanteion)	Leake 1835: (I) 185, 231–234, 242 (III) 3, 7, 35 (IV) 7–8, 51–56; Philippson and Kirsten 1956/8: 39, 101, 104, 212–213; Dakaris 1958a; 1958b; 1960a; 1960b; 1962; 1963a; 1963b; 1963c; 1967c: 32; 1972a: 28–29, 32, 62–63; 1975a; 1975b; 1976a; 1976b; 1977a; 1977b; Lepore 1962: 14; Hammond 1967: 65–66, 285, 291, 313, 319–320, 326, 362, 366, 369, 387; Vokotopoulou 1969b: 193–194; Scoufopoulos 1971: 90–91; Snodgrass 1971: 172; Papadopoulos 1976: 277–278, 280, 284, 290–292, 303, 316; Hope Simpson and Dickinson 1979: 299–300; Tzoubara-Souli 1979: 102–105; Soueref 1986: 62–68, figs. 4, 6, 11, 12, 30, 31
Bizani	Hammond 1967: 302–303; Papadopoulos 1976: catalogue
Cheimerio-Kouteti	Dakaris 1972a: 63; Papadopoulos 1976: 274–275; Mouselimis 1989: 44
Despotiko	Andreou 1994: 239
Dikorpho	Andreou 1994: 242
Distrato	Hammond 1967: 303; Papadopoulos 1976: catalogue
Dodona	Leake 1835: (IV) 168–201; Karapanos 1878: 96, 101–102, 136–140, pls. 53, 54, 57; Evangelidis 1935: 192–212, 242, figs. 1–3, pls. 2–10; 1952: 279–282, 290, 293, 295, figs. 1–4, 12, 21; 1956: 155, pl. 59; 1959a: 114, pl. 100; 1959b: 75–76, fig. 81; Dakaris 1956: 123, 132 n. 1, 134, 141, fig. 9; 1965: 350–351, fig. 3, pl. 415; 1966b: 78–79, pl. 79; 1967a: 33–54, pls. 26, 28, 32, 33, 34; 1967b: 34–37; 1967c: 31–32; 1968a: 56–57, pls. 38, 40; 1968b: 42–59, figs. 44–47; 1971b: 1–4, 24, 92, pls. 19, 20; 1972b: 94–98, pl. 69; 1972c: 45; Philippson and Kirsten 1956/8: 85; Hammond 1967: 167–173, 319, 328–329, 331–336, 407–408, figs. 21, 22, 28; Vokotopoulou 1969b: 193–194, 197 n. 1, pl. 28; 1969: 116; Harding 1975: 184, 192, 196, 198; Kilian 1975: 29–30; Harding 1976; Papadopoulos 1976: 273, 283–285, 293–307, 311–312, pls. 3, 4, 9, 11, 13, 15, 19; Wardle 1977: 175–177, 191, 193–197, pl. 10; Hope Simpson and Dickinson 1979: 290–301; Soueref 1986: 39–53, figs. 6, 13, 16–18, 21, 23, 24, 26–28, 34–37, 43–45, 47, 50, 51, 54–56
Doliana	Douzougli and Zachos 1994, 2002
Dourouti (Univ. of Ioannina)	Andreou 1994: 240
Dragani	Dakaris 1972a: 64; Papadopoulos 1976: 274, 277, 316
Dravatova	Wardle 1972: 187
Elaphos	Dakaris 1971a: 29–30; Papadopoulos 1976: 274
Elaphotopos	Leake 1835: (I) 166–167; Hammond 1967: 258–272; Vokotopoulou 1967: 345–346; 1969a: 345; 1969b: 179–191, 204, pl. 23–26; Papadopoulos 1976: 277–279, 282, 283, 287, 288, 290–292, 294, 296; Wardle 1977: 197; Hope Simpson and Dickinson 1979: 302–303; Soueref 1986: 23–25, figs. 6, 14, 59
Gardiki	Hammond 1967: 302; Vokotopoulou 1969b: 197, fig. 7, pl. 28; Papadopoulos 1976: 311, pl. 20

APPENDIX

<i>Site name</i>	<i>Publication (see general Bibliography)</i>
Gianniotio	Vokotopoulou 1968: 286, pl. 228; Papadopoulos 1976: 273; Soueref 1986: 68, figs. 6, 51
Goumani	Dakaris 1972a: 66; Papadopoulos 1976: catalogue
Gouves	Zachos 1998; Blackman 1998
Graikiko	<i>BCH</i> 76 (1952): 226; Hammond 1967: 315; Papadopoulos 1976: 293
Gribiani	Dakaris 1956: 131, fig. 5
Ioannina museum site	Vokotopoulou 1968: 293, pl. 237; Papadopoulos 1976: catalogue
Kakousioi	Hammond 1967: 303, 340, fig. 23, pl. XXI; Papadopoulos 1976: 311–312; Soueref 1986: 22, figs. 6, 24
Kalpaki	Leake 1835: (I) 9; Dakaris 1956: 114–153, figs. 1,2; Hammond 1967: 270, 277, 284, fig. 23; Desborough 1964: 302, 329, 330, 340, 348, 353, 355, 361, 401; Vokotopoulou 1969b: 193–194, pl. 5; Snodgrass 1971: 172; Papadopoulos 1976: 277–278, 280, 281, 286–287, 290–292, 294, 296, 303–307, 311, figs. 5, 6, 8, 11, 16, 20; Wardle 1977: 197, fig. 13; Hope Simpson and Dickinson 1979: 302; Soueref 1986: 25–28, figs. 6, 19–21, 24, 55, 59
Kalyvia	Dakaris 1967c: 30 n. 1; Vokotopoulou 1968: 294, pl. 235; Wardle 1977: 191, fig. 13; Hope Simpson and Dickinson 1979: 302–303; Papadopoulos 1976: 303, pl. 16; Soueref 1986: 23, figs. 6, 19, 52
Kassope	Dakaris 1971a: 29; Papadopoulos 1976: 274, 293
Kastri	Dakaris 1971a: 29; Papadopoulos 1976: 274, 293
Kastritsa	Leake 1835: (IV) 127–129, 196; Dakaris 1951: 173–183, fig. 7; 1952: 362–386, figs. 3, 4; 1964: 312–313, pl. 351; 1966a: 288; 1967c: 30–36, fig. 1, pl. I; Hammond 1967: 173–175, 192, 199, 291–297, 313–314, 359 n. 3, 409–411; Vokotopoulou 1968: 291, pl. 235; 1969b: 193–194; Kilian 1975: 31–32; Papadopoulos 1976: 277–278, 280–284, 303–307, 318, pls. 1, 4, 16; Hope Simpson and Dickinson 1979: 301; Soueref 1986: 36–39, figs. 6, 19, 36, 38–41, 46, 47, 52
Kastro Rogon (Vouchetio)	Dakaris 1971a: 30, 32; Papadopoulos 1976: 274–275
Katamachi	Dakaris 1972a: 65; Vokotopoulou 1972: 112–119, figs. 2, 4; Papadopoulos 1976: 297, 299–302, pls. 5, 10, 14, 15; Soueref 1986: 54, figs. 6, 29
Kato Lapsista	Vokotopoulou 1969b: 190, pl. 25; Papadopoulos 1976: catalogue
Kato Meropi	Andreou 1983, 1984, 1988, 1994: 238
Kato Pedina	Andreou 1988, 1994: 239
Kato Soudenoi Zagoriou	Douzougli 1998; Blackman 1999
Kephalovryso	Andreou 1994: 238
Kiperi	Leake 1835: (III) 8; Philippson and Kirsten 1956/8: 100–101; Dakaris 1960a: 205; 1960b: 123–127, pl. 92; 1960c: 110–111; 1967c: 32; 1972a: 32–33, 64; Desborough 1964: 102; Hammond 1967: 76–77, 313; Snodgrass 1971: 172; Bancofiore 1975: 141; Papadopoulos 1976: 276–280, 282–285, 311, 319, pls. 2, 20; 1981b; Pelon 1976: 257; Wardle 1977: 162, 166; Hope Simpson and Dickinson 1979: 300; Hope Simpson 1981: 177; Soueref 1986: 58–62, figs. 4, 6, 15, 33, 34, 36, 42, 43
Kokkinopilos	Dakaris 1971a: 29; Papadopoulos 1976: 274
Konitsa	Hammond 1967: 315, fig. 18; Papadopoulos 1976: 293, 311, pl. 20
Kopani	Andreou 1994: 241
Koutselio	Hammond 1931/2: 133–135; 1967: 292, 295 n. 2, 298, 301, 305, 308, 361, figs. 11, 13–15; Evangelidis 1947: 9, 12; 1952: 279; Papadopoulos 1976: 274, 282
Krya	French 1991; Zachos 1995, 1997; Tomlinson 1996; Tartaron and Zachos 1999
Ktismata	Andreou 1994: 238
Lachanokastro	Hammond 1967: 340, fig. 23, pl. XXI; Vokotopoulou 1969b: 197–198; Papadopoulos 1976: 311–312, pl. 18; Wardle 1977: 193; Soueref 1986: 34–35, figs. 6, 24

APPENDIX

<i>Site name</i>	<i>Publication (see general Bibliography)</i>
Lelovo	<i>BCH</i> 78 (1954): 136; Hammond 1967: 315; Papadopoulos 1976: 293
Liatovouni	Douzougli 1999, 2003
Louros River (vicinity)	Dakaris 1971: 29; Papadopoulos 1976: catalogue
Lykotrichi	Zachos 1997
Maratovouni	Karatzeni 2001; Blackman 2002
Mazaraki	Leake 1835: (I) 95–96; Philippson and Kirsten 1956/8: 233; Hammond 1967: 196; Vokotopoulou 1969a: 252–252, pl. 255; 1969b: 191–207, figs. 4–6, pls. 27–30; Papadopoulos 1976: 277–285, 287–294, 303–304, 307–308, 311–312, pls. 2–5, 7, 8, 10, 16–18, 20; Wardle 1977: 191–195; Hope Simpson and Dickinson 1979: 302; Soueref 1986: 28–34, figs. 6, 17, 18, 23, 25, 33, 41, 48, 49, 51, 53–55, 59
Megali Goritsa	Dakaris 1956: 146 n. 3; Papadopoulos 1976: catalogue
Mesogephyra	Dakaris 1956: 131–135, figs. 6, 7; 1957; 1967c: 30 n. 1; Hammond 1967: 274, 277, 318–319, 321, fig. 19, pl. XXI; Vokotopoulou 1969b: 193; Papadopoulos 1976: 277, 307–309, pl. 17; Hope Simpson and Dickinson 1979: 301–302; Soueref 1986: 21–22, figs. 22, 23, 53
Mesopotamos village	Soueref 1986: figs. 19, 52
Neochoropoulo	Dakaris 1966a: 287, pl. 290; 1967d: 399–402, pl. CIX; Papadopoulos 1976: 277, 279–282; Soueref 1986: 39, figs. 6, 49
Neokaisareia	Andreou 1994: 241
Oropos	Andreou 1994: 242
Palaiopyrgos	Andreou 1992; French 1994
Palaiorophoro	Dakaris 1971a: 29; Papadopoulos 1976: 274
Paramythia-Tsardakia	Leake 1835: (I) 233–234 (II) 59–68; Philippson and Kirsten 1956/8: 99–106; Dakaris 1965: 349–351, pl. 415; 1967c: 34, figs. 2, 3, pl. I; 1972a: 64–65; Vokotopoulou 1969b: 197–198, pl. 28; Papadopoulos 1976: 275–277, 303–306, 311–312, pls. 16, 19; Wardle 1977: 191, 193, fig. 14; Hope Simpson and Dickinson 1979: 303; Soueref 1986: 57–58, figs. 6, 19, 24, 52, 55
Pediada Kokytou	Dakaris 1972a: 64; Papadopoulos 1976: 318
Perama	Andreou 1994: 240; Zachos 1997
Pesta Sklivanis	Vokotopoulou 1969b: 197 n. 1, fig. 7, pl. 28; Papadopoulos 1976: 311, pl. 20
Philiates	Hammond 1967: 86, 303; Dakaris 1972a: 66; Papadopoulos 1976: catalogue
Philippiada	Andreou 1994: 242
Plaision (Kakolangado)	Blackman 1999
Pramanta	Hammond 1967: 178, 314, 334, 355, 360, figs. 22, 25; Papadopoulos 1976: 289, 298–302; Soueref 1986: 53–54, figs. 6, 26
Pyrgos Ragiou	Preka-Alexandri 1987: 353
Rachi Platanias	Blackman 2001
Riziani	Dakaris 1961/2: 196, pl. 225; 1972a: 65; Hammond 1967: 335; 1976: 31; Vokotopoulou 1972: 116; Papadopoulos 1976: 297, 299–302, pl. 13; Soueref 1986: 56–57, figs. 6, 58
Rizovouni	Andreou 1994: 242
Rodotopi	Andreou 1994: 239; Zachos 1997
Romano	Hammond 1967: 302; Dakaris 1971a: 29; Papadopoulos 1976: catalogue
Salaora	Hammond 1967: 318; Papadopoulos 1976: catalogue
Sentenikos	Zachos 1997
Siroupolis	Hammond 1967: 332; Papadopoulos 1976: 298, pl. 12
Sistrounio	Hammond 1967: 302; Papadopoulos 1976: catalogue
Skala	Dakaris 1972a: 66; Papadopoulos 1976: catalogue
Skaphidaki	Andreou 1987: 319, pl. 174; Tartaron and Zachos 1999
Stavrodromi Pogoniou	Douzougli 1998; Blackman 1999
Stephani	Andreou 1994: 243

APPENDIX

<i>Site name</i>	<i>Publication (see general Bibliography)</i>
Strounio	Hammond 1967: 321; Papadopoulos 1976: 307–308
Terovo	Hammond 1967: 335, fig. 22; Vokotopoulou 1972: 116; Papadopoulos 1976: 297, 299–302, pls. 12, 13; Soueref 1986: 56, figs. 6, 26, 56
Themelo	Andreou 1994: 242
Theriakisio	Andreou 1994: 241
Thesprotiko	Dakaris 1971a: 28–30, 32; Papadopoulos 1976: 274–275, 293; Soueref 1986: 112, fig. 9
Toskesi (Achladea)	Vokotopoulou 1969a: 253, pl. 256; Dakaris 1971: 29; Papadopoulos 1976: 274, 293
Trikastro	Dakaris 1971a: 29–30; Papadopoulos 1976: 274
Tsergiani	Hammond 1967: 332; Papadopoulos 1976: 298, pl. 12
Vaxia	Hammond 1967: 180, 303; Papadopoulos 1976: catalogue
Vereniki	Katsadima 2001
Vigla (Themelo)	Andreou 1994: 242
Vissani	Hammond 1967: 302–303; Papadopoulos 1976: catalogue
Vovoussa	Andreou 1994: 240
Vrachanas	Dakaris 1972a: 64; Papadopoulos 1976: 274–275
Xylokastro (Ephyra)	Dakaris 1958a; 1958b; 1962; 1963a; 1963b; 1963c; 1967c: 32; 1972a: 28–29, 62–63; 1975a: 149–152; 1975b; 1976b; 1977a: 141; 1977b; Hammond 1967: 65, 302, 313, 478, 482, 661; Papadopoulos 1976: 275–278, 280, 282–284, 290–292, 303, 319, pl. 1; 1978; 1979; 1980; 1981a; 1982; 1983; 1984; 1986a; 1986b; 1987a; Dakaris and Papadopoulos 1976; Hope Simpson and Dickinson 1979: 299–300; Hope Simpson 1981: 175–176, pl. 27; Soueref 1986: 62–68, figs. 4, 6, 10, 14, 16, 31–33, 36, 44; Tartaron 2001, in press; Tartaron and Zachos 1999
Zeravina	Hammond 1967: 319, 323–324, pl. XXI; Papadopoulos 1976: 277, 307

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Index*

A

- Acheron River, 13–14, 136–139, 157, 164, 171, 179, 181–188
 - valley, *see* lower Acheron valley
- Acherousia (Lake), 5, 23, 52, 137–138
- Adriatic Sea
 - as sea route, 5, 13, 89, 92, 174, 198, 199, 211, 212
 - region, 75, 78–79
 - agency, indigenous, 159
 - in environmental change, 138–139, 141, 178, 184, 186
- Agios [Ayios] Stephanos (site, Laconia), 120
- Agriculture
 - articulation with animal husbandry, 182, 183–188, 207, 208
 - barley, 178, 181–182
 - Bronze Age, 178, 179, 181–188
 - farming, dry (rain-fed), 56, 181
 - farming, floodplain, 56, 181
 - farming, spring-fed, 56, 181
 - legumes, 181–182
 - mixed farming/herding, 179, 183–184, 185–186, 188–189, 208
 - in wetland environments, 143
 - wheat, 178, 181–182
- Aiani (site, Macedonia), 88
- Aitolokarnania, 83, 89, 92, 109–110, 154, 157, 165, 183, 184, 193
- Albania
 - contacts with Aegean, 81–83, 92, 109–110, 155, 166, 179
 - influence on Epirus and Ionian islands, 74–75, 83, 84, 86–88, 92, 109–110, 150, 154, 156, 191
- amber, 150, 151, 153, 159, 207
- Ambrakian Gulf, 18, 62, 132, 142, 157, 160
- animal husbandry, 178, 179, 182–183, 187
- annales* history, 10–13
- Aoos River, 77, 150, 157, 166
- archaeological *record* and *document*, 69–70, 189
- architecture, Bronze Age, 37–38, 41, 46–48, 49–50, 63, 65, 66, 67–68, 127, 148, 161, 188
- Argolid Exploration Project, 14
- arrowheads, bronze, *see* bronze weapons
- Assiros (site, Macedonia), 167
- Ayia Eleni (site), 37–38, 155, 164, 165, 171, 200, 203
- Ayios Ilias (site, Aitolia), 92, 112, 154
- Ayios Thomas (peninsula), 33, 112, 142, 157, 211

B

- Balkans, 13, 75–76, 166, 171
- “barbarian ware” (Handmade Burnished Ware), 79
- barley, *see* agriculture
- beach formation at LAV, 135
- Berbat-Limnes Archaeological Survey, 14
- Bintliff, John, 11

Bloch, Marc, 10

- botanical remains, 140, 167, 181
- Boubousti (site, Macedonia), 84–88, 112
- Branigan, Keith, 167
- “Bratislava” type pottery, 75–76
- Braudel, Fernand, 10–13
- bronze
 - consumption and dissemination, 160, 174
 - of Aegean type, 31–32, 151, 153, 154, 156, 160, 188
 - artifacts, 31, 85, 145, 148, 150, 153, 154, 165
 - mixed tradition, 31, 154, 156, 157
 - weapons, 31–32, 145, 148, 149–153, 154, 156, 160, 165, 188
- burials, human
 - chamber tombs, 161, 166
 - chronology, 192
 - cist graves, 24, 31, 43, 59, 82, 116, 127, 145, 148–156, 166, 176, 186, 192
 - as indicators of population, 192, 197
 - tholos tombs, 13, 69, 70, 89–90, 116, 145, 155, 160, 161, 174, 192, 207
 - and transhumant pastoralists, 149
 - tumuli, 82–83, 90, 148, 156, 161, 192, 200, 207
- Butzer, Karl, 10

C

- Cambridge/Bradford Boeotian Expedition, 14
- Carapanos, Constantinos, 18
- carrying capacity, 179, 208
- catastrophism, 10
- cattle, 52, 142, 170, 178, 179, 182, 185, 187, 209
 - bones at BA Epirote sites, 142, 170, 187
 - processing of hides, 170, 173, 203
- Chang, Claudia, 184, 185
- Cherry, John, 184, 185
- chiefs and chiefdoms, 159, 162–163, 174
- chronology
 - Bronze Age, Epirus, 36, 192
 - LAV, 192–197
 - problems, 29–32, 176, 191
- climate
 - Bronze Age Greece, 12, 140, 178
 - historical/modern, 139–140
 - LAV, 140–141, 143–144, 164, 169, 178, 208
- coastline
 - formation and change, 2–3, 5, 131–134
 - reconstruction, 131–136
- cognitive processualism, 11
- colonization
 - Minoan, 160, 167
 - Mycenaean, 13, 166, 167, 169–176, 198, 211
- commodities, production of, 172, 173, 203
- communication
 - routes to Albania, 150, 188

* This index is not exhaustive; rather, it is intended as a guide to the most relevant occurrences and discussions of important topics. For acronyms (e.g., LAV = lower Acheron valley), *see* p. iv.

INDEX

- routes, overland, 154, 156, 157, 162, 165, 171, 176, 188, 207, 209, 211
 - within LAV, 206, 209, 211
- complexity
 - evolutionary typology, 162, 164
 - social/political, 157, 159, 161, 162, 164, 172, 173, 207
- conjunctures (conjunctions), 10, 12, 13, 174
- conservatism, in material culture, 29, 192
- conspicuous consumption, 90, 158, 169, 172, 173, 176
- “core area,” Mycenaean, 154, 157, 161
- core-periphery models, 157, 159
 - core/periphery differentiation, 158, 174
 - core/periphery hierarchy, 158
- cores
 - geological, 2, 17, 131, 132, 134, 135, 137
 - pollen, 140, 141, 184, 186
- corvée labor, 170, 173
- craft specialization, in LAV, 158, 170, 171, 172, 173, 203, 204, 209
- crops, *see* agriculture
- cultivation, *see* agriculture
- cyclopean masonry, 37–39, 46, 48, 67, 127, 145, 146, 155, 160, 164, 165, 200
- Cyriacus of Ancona, 18
- D**
- daggers, bronze, *see* bronze weapons
- Dakaris, Sotirios, 18, 19, 71, 148
- daub, 37, 56, 58, 65, 127, 188, 203
- demography
 - demographic stress, 208, 209
 - population growth and decline, 10, 149, 170, 192, 193, 197, 199, 207, 209, 211
- Devollian ware, 84, 86, 88
- Dimini (site, Thessaly), 157, 159, 161
- Dodona
 - sanctuary of Zeus, 18, 20, 23
 - BA site, 2, 19, 21, 23, 29, 31, 88, 89, 90, 94, 98, 99, 106, 109, 110, 112, 116, 120, 148, 160, 162, 166, 174, 188
- Doliana (site), 2, 75, 77, 92, 123, 141, 142, 143, 186, 188, 192
- domestication
 - animals, 178, 188
 - plants, 178
- double axes, 21, 148, 154, 156, 157, 160
- Douzougli, Angelika, 19
- drought, 178
- E**
- “early state modules”, 158
- economies
 - Bronze Age, 167–169
 - Bronze Age, Epirus, 170–171, 173
 - Mycenaean, 168–169, 171
- Elaphotopos (site), 78, 98, 99, 150, 151, 153, 176
- elite(s), 90, 92, 158, 171, 172–173, 207, 210
- emulation, 13, 90, 154, 161–162, 172–173
- environment
 - Bronze Age, 12, 178, 179, 187
 - environmental determinism, 10, 12, 14, 184, 186
 - environmental stress, 179, 180
 - LAV, Bronze Age, 12, 129
 - opportunities and constraints, 178
- Ephyra (Xylokastro, site), 2, 5, 8, 13, 19, 29, 30, 39–44, 65, 88, 89, 90, 94, 98, 109, 112, 116, 120, 142, 145, 148, 154, 155, 157, 160, 164–165, 166, 170, 171, 174, 182, 189–190, 193, 200, 202, 207, 208, 209
- erosion
 - human-induced, 56, 138–139, 141, 178, 179, 204–205
 - natural, 29, 58–59, 138–139
- ethnicity and identity, 174
- ethnoarchaeology, 170, 186
- ethnographic analogy, 170, 183, 184, 185
- Europe, 13, 74–75, 153, 156, 166
- Evangelidis, Dimitrios, 18, 71
- événements (events), 10
- excavation, in Epirus, 24, 29, 189, 190, 211, 212
- F**
- farming, *see* agriculture
- faunal remains
 - mortality and exploitation patterns, 142, 186, 187
 - occurrence on Epirote sites, 127, 142, 170, 179, 182, 187, 188, 205
 - resources, 141–142, 178, 179
 - survey finds, 53, 58, 127, 187, 205
- feasting and ritual, 90, 161, 162
- Febvre, Lucien, 10
- Feuer, Bryan, 159
- Finley, Moses, 168
- fishing, 142, 143, 180, 188
- flooding, of LAV, 137, 138, 181
- floodplain
 - of Acheron River, 56, 204, 206
 - resources of, 203
 - of Vouvos River, 206, 207
- flora, *see* also botanical remains
 - remains on Bronze Age sites, 143, 181
 - resources and exploitation, 139, 141, 143, 178, 179
- fortification walls, *see* cyclopean masonry
- G**
- gathering, 143, 179, 188–189
- geology, of LAV, 129–131
- geomorphology, of LAV, 2–3, 5, 59, 129–139, 179, 189
- gifts and gift exchange, 169, 171, 172–173
- Gla (site, Boeotia), 148, 155
- Glykys Limin (bay, harbor), 2, 132, 134–136, 148, 157, 159, 164, 169–174, 198–199, 202, 209
- goats, *see* sheep and goat
- Gould, Stephen Jay, 11–12
- grape, *see* vine
- Gramousti (site), 141

INDEX

H

Halstead, Paul, 142
 harbors, 166, 167, 169–170, 202–203
 “hidden landscapes”, 33
 Hammond, N.G. L., 18, 135
 hoards, 154, 173
 Homer, *Iliad* and *Odyssey*, 5, 19–21, 23, 24, 129, 137, 148
 household, as economic unit, 185–186, 207, 208
 hunting, 143, 180, 188–189, 206
 huts, Bronze Age, 65–66
 hydrology, of LAV, 136–139, 178

I

Iliad of Homer, *see* Homer
 intensification, of production in LAV, 170, 172–173, 175, 176, 204, 207, 209
 interaction
 coastal–hinterland, 188, 207, 209
 cross-cultural, 165–176
 indigenous–Mycenaean, 154, 159, 164, 202
 symmetrical and non-symmetrical, 158–159, 164, 173
 intervisibility of sites, 69, 164, 209
 Ioannina basin, 187
 Iolkos (site, Thessaly), *see* Dimini
 Ionian Islands, 74–75, 77, 79, 82, 83, 89, 92, 93, 99, 109, 110, 119, 120, 153, 154, 155, 156, 157, 161, 162, 165, 174, 193, 207
 Ionian Sea, 5, 165
 isolated findspot, defined, 33
 isolation, of BA Epirus, 77, 92, 119, 120, 165, 179, 192
 Italy, 13, 155, 156, 166, 171, 179

K

Kalamas (Thyamis) River, 77, 151, 153, 157, 166, 188, 200, 211, 212
 Kalpaki (site), 150, 151, 153, 176, 186
 Kardulias, P. Nick, 158
 karstic landscape, 52, 53, 130
 Kastritsa (site), 18, 19, 30, 84, 89, 98, 112, 153
 Kastriza (site), 13, 44, 48, 155, 165, 171, 206, 207, 209, 211
 Keos (island), 118
 Kilian, Klaus, 89, 165, 167
 kiln, use of, 88, 156
 Kiperi (site), 2, 5, 19, 48, 67, 69, 89, 90, 92, 94, 99, 112, 145, 154, 155, 160, 164, 171, 174, 176, 209
 Knapp, A. Bernard, 10
 Knossos (site, Crete), 142, 208
 Kokytos River, 4, 5, 23, 136, 138, 157, 178, 182
 Konispol Cave (site, Albania), 2, 94, 109
 Koumasaki (site), 50, 51, 164, 170, 171, 173, 200, 203
 Krya (site), 2, 85, 88, 94, 97, 110, 112, 187

L

labor, *see* mobilization
 land use, LAV, 179, 182, 199, 209
 landscape archaeology, 1, 11, 211, 212
 landscape change, 127, 178, 184

Le Roy Ladurie, Emmanuel, 11, 13
 Leake, Colonel William, 18, 137, 139, 142, 188
 legumes, *see* agriculture
 Lerna (site, Argolid), 118, 123
 Linear B archives, 21, 142, 143, 157, 158, 168, 169, 185, 168, 169, 185, 202, 207
 lithics
 availability of raw material, 119
 BA industry, defined, 118–124, 203
 catalogue of selected survey finds, 121, 127
 expedient technology, 118, 123
 flaked, flint or chert, 2, 30, 40, 43, 49, 50, 51, 63, 118, 170, 179, 188, 192, 203
 flaked, obsidian, 50, 119, 120, 123, 179, 192
 ground stone, 30
 obsidian trade networks in Mediterranean, 118, 120
 origin and chronology, 30, 118–120, 123, 191–192
 long-distance trade, *see* trade and exchange
 longue durée, 10, 12, 174, 179, 207
 Louros River, 33, 188
 lower Acheron valley
 in BA, 12, 14, 131, 144, 164, 176, 187, 189–212
 intraregional dynamics, 202, 211
 as study area, 5, 9
 “lower town”, Ephyra, 40, 43

M

Macedonia, 71, 74, 77, 84, 86, 88, 92, 109, 112, 156, 157, 159, 161, 166, 167, 174, 184, 188
 malaria, 52, 143, 205
 Maliq (site, Albania), 75, 77, 82, 86–89, 143, 157
 Malthi (site, Messenia), 120
 manure, 182, 209
 maquis vegetation, 5, 57
 masonry, cyclopean, *see* cyclopean masonry
 Mazaraki (site), 89, 90, 98, 112, 153, 154, 155, 160, 176, 186
 megaron, 161
 Melos (island), 118–120, 198–199
 mentalités, 10
 metals, *see* bronze
 mobility, in subsistence strategies, 178, 179, 183, 208
 mobilization, of labor and resources, 158, 168, 171, 172–173, 199, 203
 monumental architecture, in LAV, 170, 171
 Mycenae (site, Argolid), 142, 155
 Mycenaean(s)
 architecture, 13, 145, 148, 160–161
 artifacts as chronological markers, 31, 145, 192
 artifacts, distribution, 166, 173, 188
 cultural practice, adoption of, 160–162, 165–166, 174, 176
 interaction with indigenous populations, 154, 159, 164, 166–176, 202
 material culture in Epirus, 13, 145–157, 161–162, 171, 174
 metals, *see* bronze
 periphery, 148, 157–160, 166–169, 174

INDEX

- periphery, discontinuous nature of, 154, 166, 174
 pottery, *see* pottery, Mycenaean
 presence as medium-term conjuncture, 12–13, 145, 174, 207, 211
 presence in Epirus, 145–177 (Chapter 8)
 presence in LAV, 164, 169–173
 presence, origin and chronology, 154–157
 mythological traditions of Epirus, 3, 13, 19–24
- N**
 navigation, maritime, 202
 Nekyomanteion
 BA site, 24, 43, 182
 Hellenistic fortified site, 24
 oracular sanctuary, 20, 23–24
 Nemea Valley Archaeological Project, 14
 Nichoria (site, Messenia), 120
 Nikopolis Project, 1–2, 8, 9, 13, 190, 211
 methodology, 14–17, 176, 190
 nucleation and dispersal of settlement, 199, 207, 209
- O**
 obsidian, *see* lithics
Odyssey of Homer, *see* Homer
 off-site scatters, defined, 33
 olives and olive oil, 90, 143, 161, 181–182, 185, 188
 Ottoman period, 18, 32, 135, 139, 183
- P**
 palatial system, Mycenaean, 148, 156, 157, 158, 159, 161, 164, 168–169, 185, 207
 paleoenvironmental reconstruction, 1, 14, 178, 211–212
 Pamvotis (Lake of Ioannina), 18, 85, 153, 187, 188
 Papadopoulos, Thanasis (Athanasios), 19, 30, 148
 Parga (village), 5, 13, 94, 154, 164
 pastoralism, *see also* domestication, transhumance
 archaeological correlates, 186
 articulation with agriculture, 182, 183–188, 207, 208
 deduced from pollen cores, 141
 grazing and herding, 52, 178, 182–183, 186, 187, 203, 205, 207, 208
 in Linear B archives, 185
 long-distance seasonal transhumance, *see* transhumance
 short-distance vertical transhumance, *see* transhumance
 pasture
 lowland, 207, 208
 upland, 171, 182–183, 184, 185, 186, 187
 peer polities, 158
 periphery, Mycenaean, *see* Mycenaean periphery
 Phanari (Ammoudia) Bay, 4
 pigs, 52, 142, 143, 178, 179, 182–183, 185, 209
 Pindos mountains, 77, 86, 92, 141, 157, 165, 178, 184
 piracy, 165, 202, 209
 Polanyi, Karl, 167–168, 171–172
 poljes, *see* wetlands
 pollen data, 184
 Port of Trade
 at Glykys Limin, 156, 169–172
 model, 167–169, 176
 post-depositional processes, 33
 post-processualism, 10, 11
 pottery, Albanian BA, 81–82, 156
 pottery, indigenous
 archaeological preservation, 71, 95, 97, 106, 109
 conservatism in, 1, 71
 forming and firing technology, 72–74, 78, 84–85, 95–97, 106, 109, 110, 112, 165
 K I, 71
 K II/III, 30, 71–84, 95–109, 145, 148, 150, 153, 157, 192, 203–204
 K IV, matt-painted, and orange-red, 84–89, 93, 94, 110–112, 148, 153, 156, 206
 origin and chronology, 30, 74–89, 92–93, 109–112, 165, 191–192
 production and consumption modes, 71–72, 74
 typology, 71, 95–96
 pottery, Ionian Islands BA, 82–83
 pottery, Macedonian BA, 84–85
 pottery, Minyan, 77, 78, 79, 82–84, 92–93, 109–110
 pottery, Mycenaean, 89–93, 94, 112–116, 188, 200, 205, 206
 alabastron, 89–90, 92, 112, 145, 148, 153, 158, 161–162, 165, 174
 in Albania, 92, 179
 catalogue of survey sherds, 113–116
 consumption and dissemination in indigenous society, 159–162, 166, 174
 at Dodona, 188
 imitations of, 89, 148
 in Ionian Islands, 92
 kylix, 89, 92, 112, 116, 145, 148, 153, 161–162, 165, 174
 in LAV, 165
 origin and chronology, 92–93, 116, 145, 154, 156–157, 165, 179
 other forms, 90, 116, 148, 153, 161–162, 165
 stirrup jar, 89, 92, 145, 148, 153, 158, 161–162, 165, 166
 pottery, pseudo-Minyan, 81–84, 92–93, 94, 109–110, 179, 191–192, 193, 205, 206
 prestige
 exchange sphere, 159, 171, 172, 174
 goods (luxury/exotic), 171, 172, 173, 207
 Preveza (nomos), 1, 4
 punctuated equilibria, 11, 12, 178
 Pylos (site, Messenia), 90, 142, 161, 203, 207
 Pylos Regional Archaeological Project (PRAP), 120
 Pyriphlegethon (stream), 23, 137
- R**
 radiocarbon dates, 61, 65, 71, 75, 134–135, 141, 192, 193, 205
 rainfall, 129, 136, 138, 139–140, 178, 181
 resources
 availability in LAV, 12, 178, 179, 181

INDEX

- seasonal and year-round exploitation, 14, 129, 178, 179, 187
- stress on, 179, 180, 208–209
- religion and cult, 21, 166, 174
- Rezina (marsh), 141, 186, 188
- Romanou (site, Messenia), 120
- S**
- Sarakatsani, 14, 142, 183–184, 185, 186
- sea level change, 132–134
- seasonality, of resources and exploitation, 14, 129, 178, 179, 187
- secondary products, 142, 178, 181, 182–183, 184
- “Secondary Products Revolution”, 181
- sedentism, 179, 187, 188, 208
- segmentary (tribal) organization, *see* tribal organization
- settlement patterns, *see also* sites
 - Early Iron Age in LAV, 207, 209, 211
 - in Epirus, 186
 - in LAV, 14, 165, 171, 187, 189–211
- Shaft Grave era, 30, 59, 83, 92, 165, 179, 191, 193
- sheep/goat, 52, 142, 170, 178, 179, 182, 185, 187, 209
- shellfish, 67, 127, 142
- Sherratt, Andrew and Susan, 172
- shipwrecks, BA, 169
- sickle elements, flint, 63, 120, 123, 179, 188, 192, 203, 205
- silica gloss, 62, 120, 123, 179, 188, 192, 203, 205
- site(s)
 - catalogue of BA sites, Epirus, 24–28
 - catalogue of survey sites, 33–69
 - conceptual issues, 16
 - contemporaneity, 197
 - definition, 16, 33–37
 - destruction, 5–6, 8, 54
 - discovery, investigation, and interpretation, 16, 29, 31, 69, 149, 165, 170, 204
 - formation, 56, 59, 60–61, 69, 189
 - hierarchy in LAV, 170, 198–201, 207, 211
 - revisits, 17
 - size, 35–36, 199–201
- site/scatter, defined, 16
- Skaphidaki (site), 59–61, 112, 127, 142, 157, 160, 188, 193, 211
- social differentiation/inequality, 13, 159, 162–163, 166, 171–174, 176, 207
- social organization, indigenous, 13, 154, 155, 156, 158, 162–164, 165, 167, 179, 171, 174, 175
- social storage, 178, 208
- soils, 55–56
- Soueref, Kostas, 13, 19, 176
- Southern Argolid, 138–139, 198–199
- specialization, craft, *see* craft specialization
- specialization, economic at Glykys Limin, 13, 166, 170, 171
- Spilaion (site), 53, 164, 170, 171, 200, 203
- springs, in LAV, 129, 138, 178, 187
- state-level organization, 159
- status, social, 170–174
- stone tools, *see* lithics
- storage, centralized, 161, 163, 166–167, 168, 170, 178, 179, 203, 208
- stratigraphy, lack of at Epirote BA sites, 1, 29, 165, 189
- structure-contingency modeling, 11–12
- subsistence
 - in BA Epirus, 186
 - diversified nature, 1, 14, 204, 205, 208
 - in LAV, 1, 14, 129, 171, 174, 179–181, 208–209, 211
 - strategies, 1, 14, 129, 178, 179–180, 183, 208
 - subsistence exchange sphere, 171
- surface survey, 2, 164, 170, 173, 186, 187, 189–191, 212
 - coverage, 190
 - methods, 14–17, 190
 - sampling, 7–9, 190
- swords, bronze, *see* bronze weapons
- T**
- technology transfer, 158–159, 162
- tectonism, 132
- Thebes (site, Boeotia), 92
- Thermon (site, Aitolia), 2, 94, 98, 109, 112–113, 154
- Thesprotia (nomos), 5
- Thessaly (province), 71, 74, 77, 85, 86, 112, 120, 123, 154, 157, 159, 166, 181, 185, 188
- tholos tombs, *see* burials, human
- Tiryns (site, Argolid), 155
- topography, 129
- Toumba Thessalonikis (site, Macedonia), 159, 167
- tract, survey, defined, 14–16
- trade and exchange
 - collapse of interregional LBA networks, 156, 207–209
 - in Linear B archives, 168–169
 - networks in BA Mediterranean, 155, 156, 157, 158, 166–169, 179, 202
 - scale in BA Mediterranean, 169
 - social significance, 169, 173
- transhumance
 - as a BA strategy, 183–188
 - geopolitical considerations, 183
 - localized, 141, 183, 184, 186, 208, 209
 - long-distance, 12, 142, 171, 176, 183–188, 208
- travelers in Epirus, 3, 18, 129
- Tren (site, Albania), 75, 92
- tribal (segmentary) organization, 155, 162–163, 171, 174
- tumuli, *see* burials, human
- U**
- urban survey, 16
- V**
- Vapheio cups, 92, 155, 179
- vegetation and vegetative communities
 - in BA Epirus, 140–141, 143, 187
 - in LAV, 3, 5, 141, 143
 - modern and historical, 139–140, 143, 187
- vine (grape and wine), 90, 143, 161–162, 181–182, 188

INDEX

Vitsa (site), 2, 75, 84, 85, 88–89, 97, 110
Vlachs, 183, 186
Vokotopoulou, Ioulia, 19, 84–85
Vouvopotamos (site), 54–57, 65, 200, 204–205
Vouvos River, 4, 43, 136–138, 157, 165, 171, 178, 182, 206–207

W

walkover, defined 17
Wardle, Kenneth, 23, 30, 80, 88, 94
warfare, 174
warrior elite, 90, 159, 160, 174
water, fresh, 12, 129–131, 178, 187, 206, 208
wetlands
 backswamp, 44, 52, 205, 206
 in LAV, 8–9, 143, 187, 188, 204–205
 marshes, 137, 187, 188, 205
 poljes and dolines, 49, 64, 65, 130–131, 206
 resources, 52, 143, 187, 188–189, 206
wheat, *see* agriculture
wild resources
 animal, 142, 178, 180, 188–189
 plant, 143, 179, 180, 188–189
Willis, Katherine, 141, 186
wine, *see* vine
Wordsworth, Christopher, 18
World Systems Theory, 158, 159

X

Xylokastro (Ephyra, site), *see* Ephyra

Z

Zachos, Konstantinos, 19, 85